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UNIVERSITY OF RAJASTHAN
MINUTES
VOLUME XXIII

(JULY, 1958 TO DECEMBER, 1958)



JAIPUR
UNIVERSITY OFFICE
1959

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MINUTES OF A MEETING OF THE SYNDICATE, HELD
ON TUESDAY, THE 12TH AUGUST 1958 AT 2.00 P.M.
AT THE UNIVERSITY OFFICE, JAIPUR.

PRESENT :

Prof. G. C. Chatterji,
Vice-Chancellor (In the Chair)

2. Pt. Devi Shanker Tiwari
 3. Shri M. M. Varma
 4. Shri Shanker Sahai Saxena
 5. Shri K. K. Chaturvedi
 6. Shri Chandra Bhan Gupta
 7. Shri B. D. Bhargava
 8. Mrs. Sharda Bhargava
 9. Miss R. P. Shastri
 10. Shri Shambhu Lal
- Shri K. L. Varma

(Registrar)

1. The minutes of the meeting of the Syndicate, held on the 27th February 1958, were confirmed.

2. With reference to its Res. No. 4, dated the 28th January, 1958, the Syndicate considered letter No. G/1509/57, dated the 25th September, 1957 from M/S. Pioneers, the University robe suppliers, for raising the hire charges of gowns from Rs. 1. 50 to Rs. 2. 00 per set of gown and hood and reviving the contract for a further period of 10 years, along with the recommendation of the Vice-Chancellor (postponed last time pending examination of the matter by the Vice-Chancellor).

Resolved that as recommended by the Vice-Chancellor, the hire charges of a gown and hood be raised from Rs. 1. 50 to Rs. 2.00.

Resolved further that the contract be renewed for a further period of three years on the expiry of the present contract.

3. With reference to its Res. No. 14, dated the 28th January, 1958 on the following observation No. 3 made by the Senate (while considering the Annual Report of the University for the year 1956-57) at its meeting held on the 8th December 1957, the Syndicate considered the recommendations of the Committee appointed by it for revising Library grants in various subjects for affiliated colleges.

"The question of suitably raising the amount of grants (recurring & non-recurring) to be spent on purchase of books by the colleges affiliated in different subjects for post-graduate examinations be taken up for consideration as the present grants were much too meagre to suitably equip the college libraries."

Resolved that the recommendations of the Committee be referred to the Faculties concerned and the Academic Council for consideration and report.

4. The Syndicate considered a letter No. F. 10 (2) Edu/C 57, dated the 12th October, 1957 from the Secretary to the Government of Rajasthan, Education Department, Jaipur, requesting for recognition of the Diploma Course in Physical Training conducted at the Physical Education Training College, Bikaner, for purposes of minimum qualifications for Physical Training Instructors in the affiliated degree and post-graduate colleges. In this connection, it also considered the views of the members of the Board of Sports in the matter to whom a copy of syllabus for the aforesaid training was sent for examination

Resolved that the college be first inspected by a Board of Inspectors to be appointed by the Vice-Chancellor.

5. With reference to its Res. No. 20, dated the 18th October, 1956 under which a Committee consisting of the Deans of the Faculties of Arts, Science and Commerce and the Registrar was

appointed to recommend (under Statute 30 (6) a set of uniform Provident Fund rules for all the non-Government (private) affiliated colleges, the Syndicate considered the draft rules prepared by the Committee (*vide Appendix I*).

Resolved that the draft rules prepared by the Committee be approved subject to the modification that the words "and the Principal of the college shall be jointly" inserted between the words "Trustee" and "entitled" occurring in line 1 of clause (2) and "institution decision" occurring in the last line of rule 19 on page 7 be replaced by "decision of the institution."

Resolved further that (i) the rules be circulated among all the affiliated private colleges (old and new) for adoption with effect from the next financial year i. e. from April 1, 1959 and sending a compliance report, and (ii) the rules be incorporated at a suitable place in the next edition of the University Hand Book Part II.

6. The Syndicate considered letter No. 510/58, dated the 22nd March 1958 received from the Manager, United Commercial Bank Ltd., Jaipur offering to open a branch of the Bank in the University Campus, on the following conditions:—

(i) that a suitable accommodation consisting of a Banking hall of about 20'x20' or 20'x18' and a strong room (preferably underground) of 15'x10' is provided on a reasonable standard rent;

(ii) that the bank is allowed to transact business with the residents of Gandhinagar as the income from the University business will not even cover the bank's expenses.

Resolved that owing to the present financial stringency the offer be not accepted.

7. *Resolved that* the proficiency test in Hindi be held twice a year—once in April with the main Degree examinations and again in August along with the Supplementary Examinations (instead of the one in April, as at present) in view of the fact

that candidates, who are not successful in the Test in April or are unable to appear thereat are put to hardship as they have to wait for their degrees for full one year when they can take the Test again in April next; and the Ordinance 199-B be amended so as to read as under:

'O. 199-B— The examination for the Proficiency Test in Hindi shall be held each year in the months of April (with the main degree examinations) and August (along with the Supplementary examinations).'

8. With reference to its Res. No. 17, dated the 28th January, 1958 under which it had approved of the office suggestion to the effect that candidates (regular or private) be not permitted to appear at two main post-degree examinations of the University in one and the same year, the Syndicate considered the following draft Ordinance in that behalf:-

O. 168-A. Notwithstanding any thing contained in these Ordinances, a candidate shall in no case be permitted to appear at two (main post-degree examinations of the University in one and the same year.'

Resolved that the matter be re-examined so as to exclude the possibility of a candidate taking any two main examinations—degree and/or post-degree and brought again before the Syndicate for approval.

9. The Syndicate considered an office proposal to check the malpractice of candidates writing some unauthorised things or special marks (decorative or otherwise) in the answer-books at the post-graduate examinations (where fictitious Roll Nos. are used) with the intention of giving an indication to the examiner about their identity.

Resolved that the following note be given on (i) the title covers of the answer-books for the post-graduate examinations, (ii) the back of the admission cards issued to candidates, (iii) in

the Rules for the guidance of candidates and (iv) in the Instructions to Invigilators and Superintendents:-

“Candidates appearing at the post-graduate examinations must not write their Roll Nos., names or Enrolment Nos., or make any other sign or mark inside their answer-books. Any breach of this instruction is liable to be penalised.”

10. The Syndicate confirmed the orders, dated the 4th June, 1958, passed by the Vice-Chancellor to the effect that the candidates passing the Higher Secondary Examination of the Board of Secondary Education, Rajasthan, Jaipur, in 1958 and desiring to take the First Year Examination of the Three Year Degree course of the University in 1959 be not allowed to appear as private candidates, as the necessary rules etc. in that behalf had not been framed and approved by the University, and *resolved that*, for future years, the question whether private candidates under the categories of women, teachers, inspectors, librarians and library clerks be allowed to take the University examinations under the Three year degree course scheme in the Faculties of Arts, Science and Commerce and the Pre-University Examination be referred to the 'Three Year Degree Course Committee for consideration.

11. The Syndicate considered the recommendations of the Academic Council made at its meeting held on the 25th February 1958.

Resolved that the recommendations of the Council be approved.

12. With reference to Res. No. 33 of the Academic Council, under which it had accepted the recommendations of the Faculty of Engineering & Technology with regard to courses of study and additions and/or alterations in Ordinances and Regulations, the Syndicate approved the addition of the words “and who has obtained an aggregate of 50 per cent marks in the above subjects” in line 6 of Ordinance No. 305 as proposed by the Principals of the two Engineering Colleges intimating that these words

were in fact left out through oversight in the original minutes of the Faculty.

13. The Syndicate considered the recommendations of the Board of Studies in Hindi made at its meeting held on the 18th December 1957, with regard to the desirability of holding the Hindi Examinations in the middle of the session instead of April, referred to it for consideration vide Academic Council Res. No. 9 (3).

Resolved that the recommendation of the Board of Studies in Hindi be accepted and the Hindi Examinations be held in the month of October, as before.

14. With reference to its Res. No. 19, dated the 25th July, 1956 under which it had referred the proposal of the Government of Rajasthan for setting up a residential University at Jodhpur to the University Education Re-organisation Committee, the Syndicate considered the following recommendation made by the Committee at its meeting held on January 24, 1958:—

"Resolved that the Government be informed that in the present state of transition the proposal of starting a residential University at Jodhpur was not feasible."

Resolved that the recommendation made by the Committee be approved.

15. The Syndicate considered a letter No. 334/2, dated the 1st May, 1958, from the President, Current Science Association, Raman Research Institute, Bangalore, requesting that the University may give an annual subvention in the form of a substantial amount to the journal - CURRENT SCIENCE, which has been rendering Yeomen's Service to the Scientific awakening in the country for the past 25 years.

Resolved that the President of the Association be informed with regret that, owing to financial stringency, the University would not be in a position to give an annual subvention in the form desired.

16. The Syndicate considered a letter No. D. 1025/58-H. 2, dated the 14th March 1958, from the Under Secretary to the Government of India, Ministry of Education and Scientific Research, New Delhi, enquiring whether the University would be prepared to undertake any scheme independently for translation of Standard works of University level on different subjects in Hindi in case financial assistance was given to the University for the purpose and the extent to which the University would be prepared to share the expenditure; adding that in translating the standard books, the terminology evolved by the Board of Scientific Terminology in Hindi in different subjects shall have to be used.

Resolved that the letter be referred to the Publication Board for consideration.

17. The Syndicate considered a proposal, approved by the Vice-Chancellor, for addition of the following Ordinance No. 144A so as to incorporate "Instructions for maintenance of students' attendance register in affiliated colleges and teaching departments of the University" with a view to bringing about uniformity of procedure in all the institutions :—

"O. 144-A.

The students' attendance registers shall be maintained by each affiliated college and University Teaching Department in accordance with the following instructions:

1. Enter in ink all the details i. e. the name of the class (with section), the subject, month, the session, the change of a student from one section or faculty to the other and the names of classes etc. (in the remarks column, taken by a member of the staff.
2. The word 'Primus' or 'Secundus' or the name of the student's father should be written in case there is more than one student of the same name in a class.
3. Attendance of a student should be marked by a numerical figure and not by 'P' or a dot. Absence should be

indicated by 'A' only. Presence on the first day shall be indicated by (1), on the second day by (2) and so on. The last figure on page shall be indicated both in figure and words and duly initialled by the teacher concerned (with date, month and year) at the bottom of the page.

4. Changes, if any, in the attendance recorded shall be made after informing the Principal or the Head of the Department concerned and will be initialled with date by the teacher concerned after giving reasons in the remarks column for such a change.
5. At the end of each 'Break', the attendance registers in a department shall be collected by the Head of the Department and attendances in each class consolidated and reported to the office on the lists to be supplied for the purpose duly signed at the bottom of each page. Any irregularity detected shall be reported in writing to the Principal or the University as the case may be, by the Head of the Department.
6. No attendance shall be recorded from and after the date of commencement of the preparation leave.
7. Not more than two extra lectures on any particular day or holiday should be recorded if classes have been taken for two periods or more on that day. All extra classes should be taken well in advance of the date of commencement of the preparation leave. The scheme of extra-lectures should be planned and executed from the beginning of the session.
8. Members of the staff are personally responsible for the safe custody of the attendance registers.
9. An index should be given by every teacher on the first page of the register to facilitate quick reference to details like classes taken, total number of lectures delivered in a class till the date of commencement of preparation leave etc.

The Syndicate did not favour the inclusion of the above instructions in the Hand Book but authorised the Vice-Chancellor to issue a D. O. letter to Principals of colleges drawing their attention to the desirability of adopting scheme of the type to bring about, uniformity, accuracy and improvement in the matter of recording attendance.

18. The Syndicate considered the general question of permitting clerks from the Central Office for getting library training (as University nominees) at their own expense.

Resolved that administrative exigencies permitting, the clerks of the Central Office may be allowed to go as University nominees for library training at their own expense.

19. The Registrar reported that His Highness Maharao Bhim Singhji of Kota had very kindly agreed, vide his letter dated the 19th June, 1958, to contribute, circumstances permitting, Rs. 15,000/- annually for a further period of five years towards the maintenance of the University Department of History.

Resolved that the contribution be thankfully accepted, and a letter of thanks be sent to His Highness by the Vice-Chancellor on behalf of the Syndicate.

20. The Syndicate postponed the question of appointing a Committee for suggesting additions/alterations in the Statutes, Ordinances, Regulations etc. (as contained in the University Hand Book Part II), wherever necessary, as a result of the introduction of the 3-year degree course and the Pre-University course till after the syllabi and scheme of examinations are approved by the various bodies and authorised the Vice-Chancellor to pass necessary orders on matters calling for urgent action.

21. The Syndicate considered a letter No. 680-757, dated the 14th May, 1958 from the Secretary, Inter-University Board of India inviting the Vice-Chancellor and two more delegates from the University to attend the Eighth Quinquennial Conference of the Universities to be held at Chandigarh (Panjab University)

on the 4th, 5th and 6th December 1958 and *authorised* the Vice Chancellor to nominate 2 persons for the Conference.

22. With reference to its resolution No. 11, dated the 27th February, 1958, approving of the report dated the 19th February, 1958, of the Three-year Degree Course Committee (as approved by the Academic Council at its meeting held on the 25th February, 1958 according to which it was decided to introduce the Pre-University and the Three-year Degree Course with effect from July 1959, and the Vice-Chancellor was authorised to take such steps under his emergency powers as deemed proper in case earlier introduction of the courses became necessary, the Registrar reported that at the request of the Government of Rajasthan the Vice Chancellor had issued the following orders under his emergency powers so as to permit starting the 1st year of the new 3-year degree course in 13 affiliated Government colleges selected by the Government for the purpose with effect from July, 1958, for the students who passed the Higher Secondary Examination of the Rajasthan Board of Secondary Education in 1958:—

"In view of the facts that (i) about three thousand students have appeared at the Higher Secondary Certificate of the Rajasthan Board this year, some provision has to be made in the new set up without delay for their admission to the first year of the three years Integrated courses during the session 1958-59 as desired by the Government in some of the Government colleges affiliated to the University (ii) there is little time at the disposal of the University to have the recommendations of the Boards of Studies approved by the various Faculties, Academic Council and Syndicate, I, under emergency powers conferred upon me under section 13 (4) (a) of the University Act hereby order that the courses of study recommended by the Boards of Studies concerned at their meetings in May, 1958 for the first year of the three year degree course examination of those students who are to be admitted to that class in July, 1958 be adopted. This is subject to the following

conditions:—

- i) The admissions to the present first year of the Intermediate class shall continue this year and no college will be compelled to switch over to the 3-year degree course with effect from July, 1958.
- ii) Necessary facilities with regard to the staff, equipment, library etc. etc. are provided by the Government of Rajasthan on or before 1st July, 1958 for running the first year of the three year degree course in Government colleges approved by the Government, detailed information about which should be in the hands of the University authorities not later than 1st July, 1958.
- iii) All other recommendations of the University as communicated to the Government under our No. 15616, dated 12.3.1958 are given effect to from 1959."

Resolved that the action taken by the Vice-Chancellor, in the circumstances, be confirmed.

Resolved further that the colleges, which have started the 1st year of the Three-year degree course this year, be inspected by the University with special reference to the following points, and a report be then made to the Syndicate:—

1. Proportion of students and teachers.
2. Provision for tutorials.
3. Arrangement for teaching General Education.
4. Equipment and Laboratory etc.

23. The Syndicate considered the question of allowing an increase in prices of Text-Books (which are University publications) published by various firms under the authority of the University prescribed formerly by the University and now by the Board of Secondary Education Rajasthan, Jaipur, for the High School and Intermediate Examinations of 1960, as requested again by the Publishers on the ground that the cost of production had since gone higher.

Resolved that as already said in its Resolution No. 7 dated the 24th August, 1957, no increase in the prices of the books be permitted. The Publishers be, however, allowed to use 24 lbs. paper instead of 28 lbs. for printing the books, and they be informed that they must bring out the books immediately and place the same in the market failing which the contract *will be cancelled*

24. The Syndicate perused the chart given below showing the results of the M. Sc. Final examinations of 1958 from which it was observed that the number of first classes were too many in certain cases. It was further observed that in certain subjects where practical or sessional work was involved the first classes were mainly due to over-weightage of marks in practicals or sessionals in spite of the fact that the performance in the theory papers was rather poor.

In this connection it considered ways to counteract the tendency of giving high marks in practicals and sessionals resulting in a rather cheap award of the first division. Among the suggestions considered, one was (i) to award division in Theory and Practical separately at the M. Sc. Examination and (ii) no dissertation or thesis be allowed to be offered in the Faculties of Arts and Education at the Post-graduate level.

M. Sc. Final

Subjects	Actually appeared.	Ist Div.	IInd Div.	IIInd Div.	Total passed.
Mathematics.	38	9	10	10	29
Physics.	23	13	10	—	23
Chemistry.	45	16	26	2	44
Zoology.	20	5	15	—	20
Botany.	15	—	15	—	15
Geology.	8	3	5	—	8

Resolved that the question be referred to the Academic Council for examination.

25. The Syndicate considered the question of constituting a Board of Studies in 'General Education' which has been included as a compulsory subject in the 3 year degree course scheme in the Faculties of Arts, Science and Commerce and also for the Pre University Examination.

In this connection it was reported to the Syndicate that the subject of General Education was introduced on an all India basis at the instance of the Ministry of Education and the Conference of Universities, and that the Vice-Chancellor had appointed an ad-hoc committee to recommend scope of syllabus etc. in the subject.

Resolved that i) since the subject was common to the Faculties of Arts, Science and Commerce, the question as to which of the Faculties be called upon to constitute the Board, be referred to the Academic Council and (ii) the action taken by the Vice-Chancellor be confirmed.

26. The Syndicate postponed consideration of the recommendations made by the Sports Board at its meeting held on the 5th May 1958 to its next meeting, and desired that the rules framed by the Board for University Tournaments be circulated among the members of the Syndicate and further *resolved that* :—

1. for this year's tournament the existing rules be followed; and
2. the Vice-Chancellor be authorised to decide the venues for this year's tournaments.

27. *Resolved that* the last dates for the receipt of application forms for admission to the University Examinations from regular students be changed from 1st March to 15th January in the case of M. B., B. S. and Vet. Science examinations and from 15th December to 1st December in the case of the rest, with a view to give a little more time to the office for printing roll lists early so as to make them available for the practical examiners well before the commencement of the practical examinations in Feb-

ruary/March and the following amendments to this effect be made in Ordinance 146 :

- (1) "Substitute-'1st December' for '15th December' in line 2-3.
- (2) Substitute-'15th January' for '1st March' in sub-clause (i) to proviso to clause (3) of the Ordinance.

28. *Resolved that*, as suggested by the Principal, S. M. S. Medical College, Jaipur, (vide his letter No. 4939/MC/58, dated the 2nd July 1958) the following note be given under Ordinance 86 (so as to provide admission of candidates, migrating from other Universities after passing the First M. B., B. S. examination, to the third year M. B., B. S. class, in exceptional cases) :—

*"Note :—*In exceptional circumstances for reasons of health, transfer of guardian etc. a candidate may be admitted in the beginning of 3rd year M. B., B. S. course, provided he has passed the First M.B., B.S. examination of a recognised University and has secured 55% marks in each subject and has obtained at least 50% marks in aggregate in I. Sc. or B. Sc. examination."

29. The Syndicate authorised the Vice-Chancellor to fix a date for the next Convocation of the University, preferably in the last week of November.

30. With reference to Ordinance 299-M(d) under which candidates can appear at the Final B. V. Sc. and A. H. examination one year after passing the Third B. V. Sc. and A. H. examination, the Registrar reported that the Principal of the college had allowed the failures of the third year examination to simultaneously keep terms for the Final examination in contravention of the said Ordinance without the knowledge of the University and sent them up for the Final examination of April 1958, only six months after passing the III year examination with the result that such candidates had appeared at and passed the Final examination six months before the due date.

In this connection, the Registrar further reported that—

- (i) there were three more students from the first batch who had passed the third B.V.Sc. and A.H. Examination in April 1958 after three attempts and who had been keeping terms in the Final B. V. Sc. and A. H. class since April 1957 and should normally appear according to O. 299 M (d) of the Hand Book at the Final B. V. Sc. examination in April 1959.
- (ii) the failures of the Third B. V. Sc. & A. H. examination of April, 1958, have represented to the University that they be permitted to keep terms in the Final class and allowed as here-to-fore to appear at the Final examination only six months after passing the IIIrd year examination like their predecessors.

Resolved that :—

- (i) the action of the Principal in sending up such students as were wrongly allowed to join the Final B. V. Sc. & A. H. class and who passed that examination in April 1958 be condoned.
- (ii) the remaining three students from the first batch who passed the Third B.V.Sc. and A.H. Examination in April last and had been simultaneously reading in the Final class since April 1957 be allowed to sit for the Final B.V.Sc. & A. H. Examination in October 1958 (only six months after), like their predecessors.
- (iii) the failures of the Third B. V. Sc. & A. H. Examination of April 1958, who have sent us their representation to the University, be permitted to keep terms in the Final B. V. Sc. & A. H. class and be allowed to appear at the Final B. V. Sc. & A. H. Examination six months after passing the III Yr. examination as a special case.

Resolved further that the rules governing admission of students to the B. V. Sc. & A. H. Examinations be referred to the

Faculty of Medicine, Pharmaceutics & Veterinary Science for review, in the light of those for the M. B., B. S. Examination as the nature of the two examinations was more or less similar.

31. The Syndicate considered letter dated the 21st May 1958 from the Principal, M. B. M. Engineering College, Jodhpur, suggesting that with a view to enable the B. E. (Civil) students to complete their practical training and project work during the dry season which would not be possible if the examination is held in April as at present, the B. E. Civil Examination be held in January so as to enable the students to commence the project work immediately after their examination is over and thereafter complete the remaining period of the practical training by about the 1st week of May at the latest making it thus possible to declare the results as at present.

Resolved that the request of the Principal together with the difficulties pointed out by the office in holding the examination in January be referred to the Academic Council for consideration.

32. The Syndicate considered the following dates for the commencement of the various University examinations of 1959, as proposed by the office.

Name of examination	Date proposed
1. Final M. E.	Wednesday, 21st January 1959.
2. Degree (including first exam. of three year degree course), Post-graduate, Pharmacy, Education and Engineering Exams.	Thursday, April 2, 1959.
3. M. B., B. S., M. D., M. S., M. Sc. (Med.) and B. V. Sc. & A. H. Exams. (April).	Wednesday, 8th April 1959.
4. LL. B. & LL. M. Examinations.	Wednesday, 22nd April, 1959.

5. Supplementary examinations. Monday, 10th August, 1959.
6. B. E. Exam. (September) Wednesday, 16th September, 1959.
7. M. B., B. S., M. D., M. S. Wednesday, 7th October 1959.
and B. V. Sc. and A. H.
Examinations (October).
8. Hindi Examinations. Wednesday, 7th October, 1959.

Resolved that with a view to enable the Board of Secondary Education to commence its examinations a week late than usual and thereby give the students a little more time to prepare for the examination, (i) the University non-professional examinations may commence late by about a week, (ii) the professional examinations, viz., Medicine, Engineering and Veterinary Science as well as the Hindi Examinations may, however, commence on the dates proposed by the office & (iii) the B. Ed. and M. Ed. examinations be held along with the Law examinations, as proposed by the Dean of the Faculty of Education in the meeting.

33. The Syndicate approved the draft of the diploma for the degree of Bachelor of Veterinary Science and Animal Husbandry which will be awarded for the first time at the forthcoming Convocation to candidates who passed the Veterinary Science examination this year. (*vide Appendix II*).

34. With reference to O.138, the Registrar reported that the referees, appointed to examine the theses submitted by each of the following candidates on the subjects noted against each, had unanimously recommended that the degree of Ph.D. be conferred on each of them by the University:—

1. Shri Keshav Chandra Sondhi "Studies on the Hyoid and Associated structures in the Reptilia."
2. Mrs. Krishna Kumari Mehta "Diplomacy in Sanskrit Literature."

- | | |
|---------------------------------|--|
| 3. Shri Brahmanand Sharma | "Sanskrit Sahitya men Sadrashya Mulak Alan-karon ka Vikas". |
| 4. Shri Ishwar. Chandra Sharma. | "Terapanthic Sect of Jainism." |
| 5. Shri Ishwar Prakash | "A Survey and Ecological Studies of the Mammals of the Desert of Rajasthan." |
| 6. Dr. Ramanand. Tiwari. | "Satyam Shrvam Sundram." |
| 7. Shri N. C. Nair | "The Morphology, Embryology and Cytology of Meliaceae." |
| 8. Shri S. N. Mukherjee | "The Diamagnetic Behaviour of some Organic Molecules." |

Resolved that the degree of Ph. D. be awarded to each of the candidates mentioned above on the subject noted against each.

35. The Registrar reported that the referees appointed to examine the thesis submitted by Dr. Ram Sahai Saxena on the subject, "Physico-Chemical Studies on the composition of Ferrocyanide, Ferricyanide and Thio-sulphate Complexes of Metals", for the award of the degree of D. Sc. had unanimously recommended the award of the degree.

Resolved that the degree of D. Sc. be awarded to Dr. Ram Sahai Saxena on the subject noted above.

36. *Resolved that, as recommended by the external referees, the thesis, submitted by Shri Moti Lal Karel on the subject 'Naturalism in the writings of William Cowper', for the award of Ph. D. degree, be rejected.*

37. With reference to its Res. No. 24, dated the 28th January 1958 awarding, on the unanimous recommendation of the referees, the degree of Ph. D. to Shri Madan Lal Sharma on his thesis "Mimansa Darshanka Samalochnatmak Itihas", the Registrar reported that Shri Madan Lal Sharma was actually registered in the year 1955 to supplicate for the 'Vachaspati' degree (and not Ph. D.) under O.329-L of the started Faculty of Oriental Learning then in existence but now defunct, but that his case was placed before the Syndicate for the award of Ph. D. degree through some misunderstanding. In this connection, the Registrar also reported that there was every likelihood of the Oriental Faculty being revived.

Resolved that, before a decision in the matter is taken, an enquiry be made from the Registrar, Sanskrit University, Banaras whether a thesis submitted for the degree of 'Vachaspati' is required to be written in Sanskrit or it can also be written in Hindi.

38. With reference to Senate Resolution No. 9, dated the 8th December, 1957, the Syndicate postponed consideration of the following proposal of Prof. S. D. Derashri in regard to revision of minimum scales of pay recommended for teachers of affiliated colleges under Ordinance 66 of the University Hand Book Part II, along with the reply received from the Secretary, University Grants Commission, vide his letter No. F. 36-40/56 (H), dated the 28th February 1958 on the subject.

Proposal :

Resolved that O.66 be amended so as to read as follows :—

The following are recommended as the minimum scales of emoluments in the affiliated colleges :—

- | | |
|--|---------------------------|
| 1. Principals of Post-graduate colleges. | Rs. 800-50-1200. |
| 2. Principals of Degree colleges. | Rs. 500-25-700-EB-30-850. |
| 3. Principals of Inter colleges. | Rs. 300-25-650-EB-30-700. |

4. Heads of Post-graduate Departments. Rs. 500-25-700-EB-30-850.
5. Heads of Degree Departments. Rs. 300-25-500-EB-30-700.
6. Lecturers in Degree & Post-Graduate colleges. Rs. 250-15-400-EB-25-600.
7. Lecturers in Inter. colleges. Rs. 200-10-280-EB-15-400-25-450.
8. Physical Instructors (who are graduates & possess a diploma in Physical Education). Rs. 200-10-280-EB-15-400-25-450.
9. Librarian (who are graduates & possess a diploma in Library Science). Rs. 200-10-280-EB-15-400-25-450.
10. No full time member of the teaching staff, including a Demonstrator in an affiliated college shall be given a salary of less than Rs. 200 per month".

39. The Syndicate considered a letter No. 13/RR/58, dated the 18th July 1958 from Rai Bahadur Rameshwar Lal Saharia, Proprietor, Bahinaria Tea Estate, P.O. Rehabari, Dibrugarh (Assam) offering to institute one Gold Medal to be awarded to the candidate standing first among the first divisioners either at the B.A. or B.Sc. Examination of the University to be decided by the University by transferring to the University the ordinary share certificate (No. 459) for 100 shares of Rs. Ten each in the Tezapore Tea Company Ltd. reported to yield an annual dividend ranging from about Rs. 125/- to Rs. 150/-.

In this connection it was reported that the present terms and conditions laid down by the Syndicate (vide its Res. No. 8 of November 23, 1952) required a minimum endowment of Rs. 4,000/-.

Resolved that the Vice-Chancellor be authorised to take necessary action in the matter in consultation with Pt. Devi Shanker Tewari (member of the Syndicate).

40. The Syndicate considered (*vide Appendix III*) recommendations of the Committee appointed to consider the application of Shri Narendra Singh, Lecturer, University Law College, Jaipur for study leave for 2 years.

Resolved that the recommendations made by the Committee be approved and study leave for 2 years be granted to Shri Narendra Singh from the date he proceeds on leave on the terms and conditions proposed by the Committee.

41. The Syndicate considered a letter No. 133/1956-57, dated the 15th August 1956 from the Principal, G. B. Podar College, Nawalgarh, requesting that Shri A. L. Mathur, M. Sc., Lecturer in Physics at the college may be exempted from the division qualifications prescribed by the University in regard to the minimum qualifications for teachers in the affiliated colleges so as to enable him to be eligible for Headship of the Degree Department in Physics in the college in view of the facts that—(i) the appointment of Shri Mathur as a Lecturer in Physics for degree classes had already been approved of by the University; (ii) that he possessed the requisite experience of teaching B. Sc. and M. Sc. classes for more than 3 years, (iii) that he had a brilliant academic career and (iv) possessed research experience.

Resolved that as Shri Mathur did not fulfil the minimum qualifications laid down for appointment for Headship of a degree department in a college, exemption be not granted to him.

42. With reference to Syndicate Resolution No. 27, dated the 9th March 1957, the Syndicate considered the recommendations, of the Committee of Selection constituted (under Statute 20) in connection with the appointment of a Principal for the University Law College, Jaipur made at its meetings held on 15th February and 18th July, 1958 (*vide Appendices IV & V*).

Resolved that the recommendation made by the Committee be approved and the post of Principal, University Law College, Jaipur be offered to Dr. G. S. Sharma, Reader, Department of

Law, Lucknow University on a starting salary of Rs. 1000/— p. m. in the grade of Rs. 800-50-1200 on one year's probation.

43. The Syndicate considered a proposal sponsored by the University Grants Commission and approved by the Vice-Chancellor for creation of a separate section in the University office for expeditious supply of statistical and other information required from the University by the University Grants Commission.

Resolved that the proposal together with the explanatory note approved by the Vice-Chancellor (*vide Appendix VI*) be referred to a Committee consisting of —

1. Shri M. M. Varma
2. Principal B. D. Bhargava, and
3. the Registrar,

for consideration and report.

44 With reference to its resolution No. 8, dated the 24th, August, 1957, disallowing candidates to appear at two examinations of the University, i. e. at one, full examination and in an additional optional subject of another examination in the same year, the Syndicate approved of the addition of the following to the first paragraph each of Ordinances Nos. 207, 228 and 246 which govern the appearance of candidates in an additional optional subject :—

“Provided that he is not registered for any other examination of the University in the same year. Such a candidate may, however, be allowed to sit in the additional optional subject at the time of supplementary examination of the same year held in August for failures of one subject of the main B. A., B. Sc and B. Com. examinations.”

45. The Syndicate considered letter No. 1549/RC/58, dated the 29th, July, 1958, from Dr. S. P. Varma, Principal, Rajasthan College, Jaipur, suggesting that the 22nd conference of the Indian Political Science Association be held at Jaipur in December 1959, under

the auspices of the University, as requested by the office bearers of the Indian Political Science Association.

Resolved that Dr. S. P. Varma be informed with regret that due to the present financial stringency in the University it will not be possible for the University to hold the 22nd Conference of the Association under its auspices.

46. The Syndicate considered the drafts of the following documents which had been duly examined and recommended by a legal expert (Principal, University Law College):—

- i) Agreement Form to be executed by the University and Printers/Suppliers.
- ii) Certificate to be furnished by a Tenderer/Printer along with his tender.
- iii Conditions of Tender and Contract.

Resolved that the drafts be first circulated among the members of the Syndicate for comments, and then placed before the Syndicate (together with the comments, if any received) for approval.

47. With reference to O. 170 and O. 185 under which teachers and women are permitted to appear at the M. Sc. (Maths.) examination of the University without attending a regular course of study in an affiliated college, the Syndicate considered a representation made by the Secretary, Teachers' Association, Ajmer division requesting that the teachers and women (Science graduates) may be permitted to appear at the M. Sc. examination of the University in all the subjects privately after having undergone the full course in practical training in an institution approved for the purpose in view of the fact that consequent on the conversion of all the High Schools into Higher Secondary ones, their prospects unlike teachers in Arts whom the University affords the facility of appearing at the M. A. examination privately, will be dimmed unless the University came to their help in improving their qualifications by allowing them to appear at the M. Sc. examinations privately in

subjects other than Mathematics also and thus enable them to be useful teachers in the Higher Secondary Schools.

Resolved that the request of the Secretary, Teachers' Association, be not acceded to.

48. With reference to recommendation No. 4 of the meeting of the Committee appointed to consider the question of separate heads of departments in Commerce in affiliated colleges, held on 19th May, 1957, authorising the Dean of the Faculty of Commerce to suggest the subjects to be put in charge of each of the proposed three heads of departments viz. i) Head of Commerce (ii) Head of Accountancy and (iii) Head of Applied Economics (duly approved by the Academic Council and Syndicate, vide their Res. Nos. 8 and 10 of 29th October, 1957 and January 28, 1958, respectively), the Registrar reported the orders passed by the Vice-Chancellor in accepting the suggestion of the Dean in that behalf as contained in his letter No. 1198/57-58, dated the 7th April 1958 that, to begin with, the distribution of subjects amongst the three heads be done on the lines of the present distribution of subjects amongst the three Boards of Studies in Commerce i. e. the subjects assigned to the Board of Studies in Commerce (Theory), Board of Studies in Commerce (Practice) and Board of Studies in Commerce (Allied subjects) be placed in the charge of the Heads of Commerce, Accountancy and Applied Economics, respectively.

Resolved that the question of distribution of subjects among the three heads be first referred to the old Faculty of Commerce for consideration and the question of reconstituting the Faculty in the light of the new Ordinance No. 66-A be taken up after the recommendation of the old Faculty regarding the distribution of subjects is approved by the Academic Council and the Syndicate.

49. The Registrar reported the action taken by the Results Committee at its meeting held on 11th August, 1958, against the candidates who were reported by the Superintendents of various

examination centres of 1958 to have resorted to the use of unfair means in the examinations (*vide Appendix VII*).

Resolved that the action taken by Results Committee be confirmed.

50. The Registrar reported that two candidates namely Shri Prem Kumar Shrivastava (Roll No. 235) and (Miss) Sushila Tulsyan (Roll No. 1392) had secured equal number of marks in (Hindi) at the B. A. Examination of the University held in 1958 at which each of them secured I division and were thus both entitled to the award of Shri Radha Kishan Khetan Gold Medal for securing the highest number of marks in Hindi at the B. A. examination of 1958.

In this connection, the Syndicate considered whether a second medal be sanctioned by the University for award to the other candidate, as was done in similar cases in the past.

Resolved that the gold medal be awarded to each of the two students and in order to make it possible a second medal of equal value be prepared by the University.

51. The Syndicate considered a letter dated the 6th August, 1958, from Shri R. K. Agarwal, formerly Deputy Registrar in the University of Rajasthan and now Secretary of the Board of Secondary Education, Rajasthan, requesting that he may be allowed to relinquish charge of the post of Dy. Registrar, University of Rajasthan, with effect from the 1st August, 1958, the date from which he had been confirmed as Secretary of the Board and (ii) he may be granted credit for the earned leave in his account, which stood as follows :—

Leave on full pay — 6 months 22 days.

Leave on half pay— 9 months 24 days.

Resolved that :—

1. the resignation of Shri R. K. Agarwal from the post of Dy. Registrar, University of Rajasthan be accepted with

effect from 1st August, 1958, and a letter of appreciation of his services rendered by him to the University be sent to Shri Agarwal.

2. four months leave salary amounting to Rs. 2,950/- (Rs. 2500/- as salary @ Rs. 625/- p.m. plus D. A. Rs. 250/- @ Rs. 65/- p.m. plus P. F. contribution Rs. 200/- @ Rs. 50/- p.m.) be given to Shri Agarwal in lieu of the leave that stood to his credit on 1.8.58.
3. the consideration of the question of making officiating arrangements, made for the leave period of Shri R. K. Agarwal, permanent be postponed to its next meeting so as to enable the Vice-Chancellor to give a careful consideration to the matter and that in mean while, the present officiating arrangements be continued.

52. The Registrar reported that 8 new papers had been permitted by the affiliated colleges at Beawar and Udaipur to be offered by the candidates in M. A. Sociology this year in addition to the 6 offered last year, thus making a total of 14 papers in one subject alone for the examinations of 1959 in that subject.

In this connection the Syndicate considered whether the colleges be required to obtain prior permission of the University before a new paper is started at the post-graduate stage.

Resolved that (i) the papers offered be allowed for this year as a special case (ii) an enquiry be, however, made from the colleges about the number of papers actually offered and the number of candidates offering each paper together with the staff available, & if the report received from the colleges be not satisfactory, i. e. if the number of candidates offering a paper is very small or the staff is not adequate, the Vice-Chancellor be requested to address the Education Secretary, Government of Rajasthan with a view to restrict the number of papers to be offered at a college for a post-graduate examination to the minimum.

53. The Syndicate considered a letter dated the 20th May 1958, addressed by Dr. G. L. Talwar, Professor and Head of the

Department of Surgery, S. M. S. Medical College, Jaipur, and internal examiner in Surgery at the Final M. B., B. S. Examination (April), 1958 through the Principal, of the College to the Registrar, University of Rajasthan, informing that according to his records of the examination he had maintained Roll No. 75 who had been declared as failed by the University in Clinical Surgery by one mark, had actually got the minimum pass marks, viz., 50 out of 100, but, through oversight, 49 had been shown against him in the Roll list, and requesting that, as the boy had passed in all other parts of the Surgical examination and had already cleared the other subjects of the M.B., B.S. examination in the previous attempts, he may not be declared as failed in Clinical Surgery because of the oversight on his part.

Resolved that in view of the circumstances explained by Dr. G. L. Talwar and strongly endorsed by the Principal of the College, the explanation given by Dr. Talwar be accepted and the award of 49 be corrected and made 50 and the candidate be declared as passed in Surgery at the final examination of 1958 as a very special case.

54. The Syndicate confirmed the following orders passed by the Vice-Chancellor :

- (i) orders dated the 16th May, 1957 in creating the post of a whole time peon in attendance on his P. A. to carry messages and file etc. within the office as well as to and from his residence.
- (ii) orders dated the 14th November, 1957 and 4th February 1958 in (i) extending the same facility in respect of freeships to the University Department of History consequent upon the opening of the M. A. classes in the Department, as envisaged in the Syndicate Resolution No. 26 of 8-3-1956 for the Philosophy Department and the University Law College and (2) granting half freeships to the following students

of the University Department of History accordingly:-

M. A. (Final)

1. Shri Devi Lal Paliwal
2. Shri Shaukat Ali Khan.

M. A. (Previous).

1. Shri Ghan Shyam Lal Mathur
2. Shri Govind Singh Rathore.

(iii) orders dated the 21st January 1958 in sanctioning payment of the actual third class railway fare (Rs.54. 88 nP) both ways (from Rourkela to Jaipur and back) to Shri P. G. Anantwar, a candidate called for interview on 20.2.58 for the post of Steno-cum-clerk in the University Department of Economics, as a special case, on the recommendation of the Selection Committee. In this connection, also to report that in interview Shri Anantwar was not appointed, though found suitable, as he had demanded a starting salary of not less than Rs. 160/- p. m. (i. e. 5 advance increments) which could not be given and consequently the next best candidate, Shri Om Prakash was appointed on the post on the recommendation of of the Committee.

(iv) orders dated the 6th February, 1958, in relaxing, on the recommendation of the Principal, Birla Engineering College, Pilani, the condition of obtaining 55% marks in the aggregate for the purpose of appearing at the B. E. Examination (Old Scheme) under Regulation 40 in favour of Shri Yash Pandit and allowing him to appear at the B.E. Examination of April, 1958 in two papers viz., II (a) and III (b) in which he had failed in September, 1957, as a special case, in view of the fact that he was the only candidate who was to appear in all the theory papers of the

Mechanical Branch according to the old Scheme which would have meant unnecessary expenditure to the University. The candidate passed the examination in the two papers.

- (v) orders dated the 5th March, 1958 in sanctioning payment of Rs. 500/- to Shri K. L. Bordia, the author as remuneration for revising the book-Samaji Gyan, prescribed for the High School standard.
- (vi) orders dated the 10th May, 1958, in allowing the admission of Ram Autar Agarwal, who passed the Intermediate Examination from the Board of Secondary Education, Madhya Bharat, Gwalior in 1957, as a private candidate, to III Yr. B. Com. class of S. D. Government College, Beawar, as a special case. He was admitted by the Principal against the rules through over-sight which has been regretted by him.
- (vii) orders dated the 19th March, 1958, in allowing, on the recommendation of the Principal of the college, the following candidates who had failed in more than one subject at the I and II B. V. Sc. and A. H. examinations in April, 1957 and who were wrongly permitted by the Principal, Rajasthan College of Veterinary Science and Animal Husbandry, Bikaner to keep terms in the next higher class, under O. 299 M(e) to which they were not entitled to appear at the II & III B. V. Sc. & A. H. examinations respectively, held in April, 1958, six months after passing the lower examination i. e. October, 1957.

I B. V. Sc. & A. H.

1. Shri Gulam Rasool Bedil.
2. Shri Mukut Sharma.
3. Shri Mahendra Singh Vijai.

II B. V. Sc. & A. H.

4. Shri Dwarika Prasad.
5. Shri Prem Chandra Acron.
6. Shri Satya Deo Bhardwaj.
7. Shri Sita Ram Kachwaha.
8. Shri Suresh Chandra Gnpta.
9. Shri Virendra Kumar Sharma.

(viii) Orders dated the 5th April, 1958 in recognising the Intermediate Examination and the Higher Secondary Examination of 1958 conducted by the Board of Secondary Education, Rajasthan, Jaipur for purpose of admissions to the degree courses in the University during the Session 1958-59 only with a view to avoid any technical difficulty that may arise in the matter of admissions to the said courses of the University. For future, the question will be considered by the University in receipt of a formal application to that effect together with a copy each of the rules, regulations and syllabus etc. from the Board.

(ix) orders dated the 15th April, 1958 in allowing one-Laxmi Chand Sharma, a failure of the LL. B. (Previous) examination of the University, of 1950 to appear at the Previous examination of 1958 as an ex-student of Jaswant College, Jodhpur, after completing attendance for one term in the new paper of Equity at the college during 1957-58, as was done upto the examination of 1956. (In the light of Syndicate Resolution No. 3 of the 26th May, 1954, he should have been required to appear at the examination as a full fledged regular student of an affiliated college and not as an ex-student, which fact escaped the notice of the office while scrutinising the application forms).

(x) orders dated the 16th April, 1958, in allowing T. A. to Shri Bhim Sen, Principal, Government College, Ajmer for two separate trips in connection with the Univer-

sity meetings held on 18th and 20th February, 1958 in view of the fact that he had to attend an urgent official business at his college and, therefore, he returned to Ajmer after attending the meeting on 18th February and again came to Jaipur for attending the meeting of the Library Committee on 20th February 1958. According to O. 349 since the two meetings which Shri Bhira Sen attended were within an interval of less than 4 days in between the meetings, he was entitled to daily allowance only for the interviewing days.

- (xi) orders dated the 26th April, 1958, in sanctioning, as a special case, payment of T. A. to Principal D. Vable, D. A. V. College; Ajmer, in respect of surprise inspection of the M. B. M. Engineering College, Jodhpur, which he had inspected on the 3rd April, 1958 under the wrong impression that the Engineering Examinations were to commence on the said date although they actually commenced on the 14th April. Principal Vable had furnished a major portion of the information on the prescribed form by personal inspection and talk with the Principal of the College, who was to work as Superintendent of examinations from the date of commencement of the examinations.
- (xii) orders dated the 17th May, 1958, in sanctioning payment of T. A. from Amritsar to Delhi by Air Conditioned coach to Dr. K. L. Wig, Principal, Medical College, Amritsar who came to Jaipur to conduct the Practical examination in M. D. Parts I and II on April 27, 1958.
- (xiii) orders dated the 4th June, 1958 in prescribing 15 and 22 (37) and revised orders dated the 31st July 1958 in prescribing 14 & 22 (36) as the minimum pass mark in Theory and Practical test respectively for Music at the First Year examination of the three-year degree

course, on the basis of the approved scheme according to which maximum marks for Theory and Practice are 40 and 60 and the minimum pass marks are 36% and a candidate is required to pass separately in Theory and in Practice. The revised orders had to be passed in order to make the pass marks 36 instead of 37 so as to fall in line with the minimum pass marks required in case of all other subjects.

- (xiv) orders dated the 16th June, 1958, in allowing payment of T. A. for two trips (instead of T. A. for one trip and D. A. only for the interviewing days) from Delhi to Jaipur and back, as a special case, within an interval of less than 4 days between the dates of two examinations, to Dr. R. B. Arora, Professor of Pharmacology, All India Institute of Medical Science, New Delhi. Dr. Arora conducted the practical examination of M. Sc. (Pharmacology) and the Viva-Voce examination of M. D. Part I at the S.M.S. Medical College, Jaipur on the 25th and 28th April, 1958 respectively. He made two separate trips from Delhi to Jaipur and back for the purpose (by air but charged his T. A. by rail) since he had an important business to attend on the 26th April, 1958 at Delhi.
- (xv) orders of different dates in sanctioning payment as noted against each, of excess expenditure incurred at the following examination centres for the examinations of 1957 on account of contingent charges :—

The excess payment of contingent charges has been made to the following centres during the year 1958 :—

	Excess paid.
1. Basic S. T. C. Training School, Jaipur.	Rs. 14.89
2. Govt. Inter. College, Tonk.	Rs. 3.36
3. Darbar High School, Sambhar Lake.	Rs. 24.19

9. Bhim Raj High School, Barrod.	Rs. 164.22
5. Govt. High School, Bharatpur.	Rs. 29.16
6. Maharana High School, Dholpur.	Rs. 46.32
7. Maharaja's High School, Karauli.	Rs. 17.85
8. S. K. Inter College, Sikar.	Rs. 16.94
9. G. B. Podar College, Nawalgarh	Rs. 18.48
10. Motilal Inter. College, Jhunjhunu.	Rs. 10.00
11. Rajasthan Mahila Vidyalaya, Udaipur.	Rs. 65.34
12. Lambardar High School, Udaipur.	Rs. 9.97
13. Maharana High School, Chittorgarh.	Rs. 191.25
14. Shri Gordhan High School, Nathdwara	Rs. 20 59
15. Maharawal High School, Dungarpur.	Rs. 35.74
16. Shri Ram High School, Partabgarh.	Rs. 47.00
17. Sardar High School, Jodhpur.	Rs. 130.89
18. Mahatma Gandhi High School, Jodhpur.	Rs. 53.87
19. New Govt. High School, Umedpur.	Rs. 22.52
20. Mahesh High School, Jodhpur.	Rs. 84.78
21. Sir Pratap High School, Jodhpur.	Rs. 75 56
22. Govt. Bangur High School, Pali.	Rs. 4.69
23. Govt. Inter. College, Sirohi.	Rs. 5.37
24. S. P. U. Inter. College, Falna.	Rs. 35.83
25. S. M. Girls Inter. College, Kota.	Rs. 9.34
26. New High School, Kota.	Rs. 2.95
27. A. V. High School, Baran.	Rs. 1.98
28. Jaswant College, Jodhpur.	Rs. 35.91
29. S. M. K. College, Jodhpur.	Rs. 90.81
30. Birla College of Sc. & Com., Pilani.	Rs. 69.75
31. Dungar College, Bikaner.	Rs. 24.54
32. M. B. College, Udaipur.	Rs. 170.50

33. Govt. College, Kota Rs. 67.18
34. M. S. J. College, Bharatpur. Rs. 71.92
35. T. T. College, Udaipur. Rs. 9.56
36. Govt. College, Ganganagar. Rs. 22.87.

(xvi) orders dated the 26.6.1958 in allowing provisional admission to the next higher classes to candidates who have been declared eligible for appearing at the Supplementary examinations of the Board of Secondary Education, Rajasthan, Jaipur of 1958 on the ground that when the High School and Intermediate examinations were conducted by this University, the above facility was given to such candidates.

(xvii) orders sanctioning T. A. to Dr. R. D. Adatia, Principal, Bhavan's College, Andheri (Bombay) Practical Examiner, M.Sc. (Botany) at Pilani from Bombay to Pilani via Delhi which is a longer route. Shri Adatia had purchased his ticket from Bombay to Chirawa but the Frontier Mail arrived at Sawai Madhopur late by 2.15 hours on that day. The train for Chirawa had already left Sawai Madhopur. In order, therefore, to reach Pilani in time he went by the same Frontier Mail to Delhi and from there to Loharu. He thereby incurred excess expenditure (Railway fare) of Rs. 12.77 and had also sent the Railway Receipt on this account.

(xviii) order dated the 12 July, 1958 extending the last date fixed for submission of books by the Registered Publishers (Under Ordinance 64 (5) from 1st December, 1958 to 30th April, 1959 as a special case this year, with a view to facilitate submission of books by the publishers for the Pre-University examination of 1961, I year Examination of 1961, II year examination of 1962 and the Final Year examination of 1963 in the new 3-year Degree Course Scheme for consideration

by the respective Boards of Studies at their meetings to be held in July/August 1959.

- (xix) orders dated 22.7.1958 permitting Principals of degree and post-graduate colleges in Rajasthan to admit this year also as a special case to the degree first year classes such candidates as are bonafide residents of Rajasthan and have passed the Intermediate examination from the Ajmer Board, as private candidates.

*Note:—*This concession is to be the last for such private candidates.

- (xx) orders condoning on the recommendation of the Principals of colleges concerned the shortage in attendance of the candidates for admission to the various University examinations held in 1958.

- (xxi) orders permitting temporary withdrawals (*vide Appendix VIII*) by the University employees from their respective Provident Fund accounts during the financial year ending on the 31st March, 1958.

The meeting ended with a vote of thanks to the Chair.

G. C. Chatterji
Vice-Chancellor.

K. L. Varma
Registrar.

APPENDIX I

(Ref. Syndicate Res. No. 5 of 12th August, 1958)

Model Provident Fund Rules for private colleges affiliated to the University.

1. The institution shall constitute a Provident Fund for the benefit of its teachers, clerical staff and servants in such manner and subject to such conditions as may be prescribed by the rules.

2. There shall be a Provident Fund for the benefit of the permanent officers, teachers, clerical staff and servants employed by the institution.

The Management of the Provident Fund shall vest in the Board of Trustees, which may, from time to time, make Regulations or issue such general or special directions as may be consistent with the Rules as to (a) the conduct of the business of the Fund and (b) any matter relating to the Fund, or its management or the privileges of the depositors not herein expressly provided for, or vary or cancel any Regulations made or directions given.

N. B. Constitution of the Board of Trustees to be as follows :

- (1) The trustees of the Fund shall be (1) one Trustee nominated by the Managing Committee (2) Principal and (3) One member of the teaching staff other than the Principal who has put in longest service in the college.
- (2) The Management Trustee shall be entitled to : —
 - (a) draw and endorse cheques, Bills of Exchange and otherwise operate on any Banking Account.
 - (b) endorse and negotiate the Securities.
 - (c) enter into any agreement or agreements or execute any writing or writings or any instrument or instruments that may be necessary to be executed for the management of the Trust's fund and properties.
- (3) The Accounts of the Fund shall be made up yearly as at 31st March and an audited statement of affairs as at that date shall be submitted to a meeting of the Trustees to be held not later than 31st July in every year and a copy of such statement shall be circulated to each member.
- (4) Every employee of the college receiving a salary of Rs. 30 or upwards shall be eligible for membership.
- (5) Every employee who shall be or become a member, shall be subject to these Rules or any other rules which may be in

force for the time being and shall sign an agreement in the form annexed to these rules.

3. (i) Every servant of the institution holding a permanent substantive appointment, or appointed for a fixed period of not less than five years, and receiving a salary of thirty rupees per mensem or more shall be entitled and required to subscribe to the Provident Fund. Part time or officiating employees shall not be so entitled.
- (ii) Persons appointed on probation to substantive appointments will be entitled to subscribe to the Provident Fund, but if their services terminate before their confirmation they shall not be entitled to receive any portion of the contribution made by the institution or the interest accruing thereon.
- (iii) The employee shall forfeit to the Fund the Employer's contributions together with interest credited in respect of such contributions and accumulations thereof in the following circumstances :—
- (a) if he is dismissed for misconduct, or
- (b) Voluntarily leaves his employment before the expiration of five years of the service otherwise than on account of ill health or other unavoidable cause.

4. Every employee of the institution entitled to the benefits of the provident Fund shall be required to sign a written declaration in the prescribed form that he has read this Rule and agrees to abide by it, and shall hand in for registration in the office of the Head of the institution the names of the person or persons to whom he wishes the balance at his credit to be paid in the event of his death.

The subscriber may, from time to time, add or change his nominee by written application to the Principal.

A register of such nominees shall be kept in the office of the college.

5. The rate of subscription shall be 8 per cent of the monthly salary and the amount calculated on this basis shall be deducted from the monthly salary of each employee.

Note :- No subscription or contribution shall be made to the Provident Fund by or for the benefit of an employee who is on leave without salary.

6. The institution shall in the case of each subscriber make a monthly contribution at the rate of 8% of his salary.

- (c) The policy may not be effected for the benefit of any beneficiary other than the wife of the subscriber or the wife and children or any of them.
14. (1) The policy, within three months after the first withdrawal from the fund in respect of the policy or in the case of an insurance company whose headquarter is outside India, within such further period as the Principal, if he is satisfied by the production of the completion certificate (interim Receipt), may fix, shall—
- (a) unless it is a policy expressed on the face of it to be for the benefit of the wife of the subscriber, or of his wife and children, or any of them, be assigned by an endorsement on the policy in Form 1 set forth in the Schedule to the institution as security for the payment of any sum which may become payable to the fund by the subscriber under rules and delivered to the Principal of the College.
- (b) if it is a policy expressed on the face of it to be for the benefit of the wife of the subscriber or of his wife and children, or any of them, be delivered to the Principal of the college.
- (2) The Principal shall satisfy himself by reference to the Insurance Company, where possible, that no prior assignment of the policy exists.
- (3) Once a policy has been accepted for the purpose of being financed from the fund, the terms of the policy shall not be altered.
- (4) If the policy is not assigned and delivered, within the said period of three months or such further period as the Principal may under clause (1) have fixed, any amount withdrawn from the fund in respect of the policy, shall with interest thereon at the rate allowed by the Post Office Savings Bank, forthwith be paid by the subscriber to the fund, or in default be ordered by the Principal to be recovered by deduction from the emoluments of the subscriber by instalments or otherwise as the Board of Trustees may direct.
- (5) Notice of assignment of the policy shall be given by the subscriber to the Insurance Company, and the acknowledgment of the notice by the Insurance Company shall be sent to the Principal within three months of the date of assignment.
15. The subscriber shall not, during the currency of the policy, draw any bonus, the drawal of which during such currency is optional under

the terms of the policy and the amount of any bonus, which under the terms of the policy the subscriber has no option to refrain from drawing during its currency, shall be paid forthwith into the fund by the subscriber or in default recovered by reduction from his emoluments by instalments or otherwise as the Board of Trustees may direct.

16. (1) Save as provided by clause (2) of the Rule 18, when the subscriber—

(a) quits the service,

Or

(b) proceeds on leave preparatory to retirement and applies to the Principal for reassignment or return of the policy,

Or

(c) While on leave, has been permitted to retire or declared by a medical authority to be unfit for further service and applies to the Principal for reassignment or return of the policy.

Or

(d) pays to the fund the whole of any amount from the fund for the purpose of payment of premium, the Principal shall—

(i) if the policy has been assigned to the institution under Rule 16, reassign the policy in Form II set forth in the Schedule to the subscriber and make it over to the subscriber.

(ii) if the policy has been delivered to him under clause (1) (b) of Rule 14, make over the policy to the subscriber :

Provided that if the subscriber, after proceeding on leave preparatory to retirement or after being, while on leave, permitted to retire or declared by a medical authority to be unfit for further service returns to duty, any policy so re-assigned or made over shall, if it has not matured or been assigned or charged or encumbered in any way, be again assigned to the institution and delivered to the Principal, as the case may be in the manner provided in Rule 14 and thereupon the provisions of these rules shall, so far as may be, again apply in respect of the policy :

Provided further that, if the policy has matured or been assigned or charged or encumbered in any way,

the provisions of clause 3 of Rule 14 applicable to a failure to assign and deliver a policy shall apply.

- (2) Save as provided by clause (2) of Rule 18, when the subscriber dies before quitting the service, the Principal shall—

(i) if the policy has been assigned to the institution under Rule No. 14, assign the policy in Form III set forth in the Schedule to such person as may be legally entitled to receive it, and shall make over the policy to such person, together with a signed notice of re-assignment addressed to the Insurance Company.

(ii) if the policy has been delivered to him under Rule 14, make over the policy to the beneficiary, if any, or if there is no beneficiary, to such person as may be legally entitled to receive it.

17. (1) Save as provided by clause (2) of Rule 18 if a policy assigned to the institution under Rule 14 before the subscriber quits the service and before his death the Principal shall realise the amount assured and shall deduct therefrom the whole or any amount withdrawn from the fund in respect of the policy with interest thereon at the rate allowed by the Post Office Savings Bank, and shall place the amount so deducted to the credit of the subscriber in the fund. The balance, if any, shall, at the option of the subscriber, be paid to the subscriber or placed to the credit of the subscriber in the fund.

- (2) Save as provided by clause (2) of Rule 18, if a policy delivered to the Principal under clause (1) (b) of Rule 14 matures before the subscriber quits the service and before his death, the Principal shall make over the policy to the subscriber, who shall pay to the fund the whole or any amount withdrawn from the fund in respect of the policy with interest thereon at the rate allowed by the Post Office Savings Bank and in default, the provisions of clause (3) of the Rule 14 applicable to a failure to assign and deliver a policy shall apply.

18. (1) If the policy lapses or becomes assigned, otherwise than to the institution under Rule 14, charged or encumbered, the provisions of clause (3) of Rule 14 applicable to a failure to assign and deliver a policy shall apply.

- (2) If the Principal receives notice—

(a) an assignment (other than an assignment to the institution under Rule 14), or

(b) a charge or encumbrance on, or

(c) an order of a court restraining dealings with the policy or any amount realised thereon, the Principal shall not—

(i) assign or re-assign or make over the policy as provided in Rule 16, or

(ii) realise the amount assured by the policy or dispose of any part of any amount so realised, or make over the policy as provided in Rule 17 but shall forthwith refer the matter to the Board of Trustees.

No. I *Form of Assignment to the Institution.*

I. A. B. of.....hereby assign unto the (Name of the institution.....) the within policy of assurance as security for payment of all sums which, under Rule No. 16 & 18 laid down by the Board of Trustees of the (name of the college.....under rules relating to the provident fund, may hereafter become liable to the institution provident fund, I hereby certify that no prior assignment of the within policy exists.

Date.....19

Signature of subscriber

Station.....

One witness to Signature.

No. II *Form of re-assignment by the Institution.*

All sums which have become payable by the above named A. B. under Rule No. 16 & 18 laid down by the Board of Trustees of the institution, under rules relating to provident fund having been paid and all liability for payment by him of any such sums in the future having ceased, the institution doth hereby reassign the within policy of assurance to the said A. B.

Date.....19

Signature of Principal

No. III *Form of Assignment by the Institution.*

The above named A. B. having died on the day of 19 the (Name of the College doth hereby assign the within policy of assurance to C. D.....

Date.....19

Signature of Principal

19. Servants employed by the Institution drawing a salary of less than Rs. 30/- per month shall be entitled to a gratuity on the following Scales:—

For 30 years' service and over—	18 months' pay.
For service over 25 years but less than 30 years.	15 months' pay.
For service over 20 years but less than 25 years.	12 months' pay.
For service over 15 years but less than 20 years.	10 months' pay.
For service over 10 years but less than 15 years.	8 months' pay.
For service over 5 years but less than 10 years.	6 months' pay.
For service of less than 5 years.	Nil

No person shall, however, be entitled to a gratuity if he is dismissed from service on account of misconduct or for some offence. If a servant dies or becomes insane while in service of the institution, the gratuity shall be paid to his dependents, who in the view of the institution are best entitled, and in such instalments as the institution may decide. The institution decision in both respects shall be final.

Every employee when joining the Fund shall subscribe an agreement in the following form: (Rule 2 (5))

I hereby declare that I have read the foregoing rules of the Employees' Provident Fund and that I hereby subscribe and agree to be bound by the said Rules or any other Rules for the time being in force.

Dated Day of 19. .

Name in full.

Date of birth.

Nature of appointment.

Date of joining service.

Salary per month.

Signature.

Witness.

...e that in the event of my death the
amount at my death shall be paid to the person whose name

appears in column 6.

Name and address of the person to be made on or minor.	6 Sex and parentage of person mentioned in column 5.

Dated _____

Signature of subscriber.

APPENDIX II

(Ref. Syndicate Res. No. 33 of the 14th August, 1958)

Roll No. _____

We, the Chancellor, Vice-Chancellor

and the Members of the Senate of the

University of Rajasthan

(JAIPUR.)

Certify that

of Rajasthan College of Veterinary Science & and Animal Husbandry, Bikaner, having been examined for the Degree of Bachelor of Veterinary Science and Animal Husbandry in 195 () and found qualified for the same, the Degree of BACHELOR OF VETERINARY SCIENCE & ANIMAL HUSBANDRY has been conferred on the _____ day of the month of _____ in the year One thousand nine hundred and fifty _____.

In testimony whereof are set the Seal of the said University and the signature of the said Vice-Chancellor.

(Seal of the University)

Vice-Chancellor.

APPENDIX III

(Ref. Syndicate Res. No. 40 of the 14th August, 1958)

Minutes of a meeting of the Committee to consider the application of Shri Narendra Singh, Lecturer, University Law College, Jaipur, for study leave for 2 years.

Present :

1. Prof. G. C. Chatterji,
(Vice-Chancellor)
2. Dr. R. N. Varma (coopted as adviser).

The Committee considered the application of Shri Narendra Singh, Lecturer, University Law College, Jaipur, forwarded by the Principal of the College vide his endorsement No. 26/E-67 dated the 14th April, 1958, requesting that he has been awarded a fellowship of 2600 by the Harvard School of Law, Cambridge, U. S. A. for prosecuting higher studies in Law, in that school and that 2 years' study leave may be granted to him for the purpose.

The Committee noted with pleasure that Shri Narendra Singh was awarded a fellowship by the Harvard School of Law and resolved to recommend that—

- (1) Study leave be granted to Shri Narendra Singh for 2 years from the date he proceeds on leave on the condition that (a) he gives an undertaking to the University that he will serve the University on return for at least 5 years (b) he will arrange submission to the University from the head of the institution (Harvard School of Law) an annual report about the progress in his studies at the end of each year (c) he shall submit a consolidated report on his study and achievements on his return from leave.
- (2) Shri Narendra Singh be granted a monthly study leave allowance equivalent to half of his monthly salary.
- (3) A whole time lecturer be appointed in the University Law College on a fixed salary of Rs. 250/- p. m. plus allowances in place of Shri Narendra Singh for the duration of his leave, for one session in the first instance, and the Principal of the

University Law college be asked to suggest a suitable candidate for appointment on the post.

The Vice-Chancellor communicated the above recommendations to Shri M. M. Varma on phone and he agreed with them.

K. L. Varma
Registrar,

G. C. Chatterji
Vice-Chancellor

APPENDIX IV

(Ref. Syndicate Res. No. 42 of the 12th August, 1958)

Minutes of a meeting of the Selection Committee for the post of Principal, University Law College, held on the 15th February, 1958, at 11.30 A.M., at the University Office, Jaipur.

A meeting of the Selection Committee for the post of Principal of the University Law College was held on the 15th February, 1958, at 11.30 a. m. at the University Office, Jaipur, when the following members were present:-

1. Prof. G. C. Chatterji, Vice-Chancellor
(In the Chair)
2. Justice J. L. Kapoor, Judge,
Supreme Court of India, New Delhi.
3. Sardar Teja Singh,
Retd. Chief Justice, Pepsu.
4. Justice K. N. Wanchoo, Chief Justice,
High Court of Judicature, Rajasthan.
5. Pt. Devi Shanker Tiwari, Retd. Chairman,
Rajasthan Public Service Commission.
6. Shri K. L. Varma
(Registrar)

17 candidates applied for the post. Only the following two were called for interview :—

1. Mr. V. R. Bhat, Belgaum (Mysore State).
2. Dr. G. S. Sharma, Lucknow University, Lucknow.

No. 2 expressed inability to be present as he was taken ill

The Committee interviewed No. 1 and did not find him upto the mark. It, therefore, decided that the Vice-Chancellor and Justice K. N. Wanchoo, Chief Justice, High Court of Judicature, Rajasthan, should interview the candidate No. 2 on any date convenient to them and then take further action in the matter as considered proper.

K. L. Varma
Registrar

G. C. Chatterji
Vice-Chancellor

APPENDIX V

(Ref. Syndicate Res. No. 37 of August 12, 1958).

Minutes of a meeting of the Selection Committee for the post of Principal, University Law College, held at the University Office, Jaipur, on the 18th July, 1958, at 11.30 a.m.

Present :

1. Prof. G. C. Chatterji, Vice-Chancellor
(in the Chair).
2. Justice K. N. Wanchoo, Chief Justice,
High Court of Judicature, Rajasthan.
Shri K. L. Varma (Registrar).

1. The Committee interviewed Dr. G. S. Sharma, Reader in the Department of Law, Lucknow University, for the post of Principal University Law College, Jaipur. Dr. Sharma officiated also as Professor for some time. The Committee found Dr. Sharma to be quite suitable for the post of Principal of the University Law College and recommended his appointment on a starting salary of Rs. 1,000/- p. m. in the grade of Rs. 800-50-1250, on probation for one year.

2. It was decided that the experts be informed about the recommendation and their concurrence to the same obtained.

G. C. Chatterji
Vice-Chancellor.

K. L. Varma
Registrar.

APPENDIX VI

(Ref. Syndicate Res. No. 43 of August 12, 1958)

Subject :—Establishment of a section in the University for purpose of supplying information asked for by the U. G. C.

A statement showing the scheme submitted by us and sanctioned by the U. G. C. is given below :—

Scheme submitted by the University		Scheme approved and sanctioned by the U. G. C.	
Annual expenditure		(For the Plan Period)	
1. One Supdt. in the grade— Rs. 250-12½-375	Rs. 3000/-	(1) Posts approved by the U.G.C. subject to the condition that the Commission will meet 50% of the actual expenditure incurred on the salary and allowances of this staff during the 2nd Five Year Plan only subject to the condition that in no year the grant payable by the Commission will exceed Rs. 6000/- per annum. (Ref. letter No.F. 87-50/58/G) dated the 21st May, 1958 from the Secretary, U. G. C.).	
2. One Senior Asstt. (150-10-250)	Rs. 1800/-		
3. U. D. Cs. (2) (100-8-180-10-220)	Rs. 2400/-		
4. One L. D. C. (Rs. 75-5-150).	Rs. 900/-		
5. Peons (2) (25-1-35).	Rs. 600/-		
Total ...	Rs. 8,700/-		
6. Plus 45% on account of D. A., P. F. & House rent to the above staff.	Rs. 3,915/-		
Total ...	Rs. 12,615/-	(2) Contingencies—expenditure on incidental charges (e.g.) stationery and postage etc. not approved.	
7. Contingencies.	Rs. 1,200/-		
Grand Total	Rs. 13,615/-		

Note :- Grant will be paid by the U. G. C. on receipt of statement of actual expenditure duly audited, during the year. The U. G. C. have called for a list of persons appointed, date of appointment and pay allowances.

At present the following 3 hands in the General Section carry out the work of U. G. C., statistics and correspondence with the Government of India.

1. Two U. D. Cs. (Shri H. L. Chaturvedi
Shri H. C. Goyal).
2. One temporary L. D. C. (Shri G. P. Saxena)

Note :- Shri Goyal has resigned and the post will be filled up shortly.

These three posts may be considered as University's 50% contribution and the rest of the staff as sanctioned by the U. G. C. may be appointed.

The University contribution 50% will be as follows :—

One Senior Asstt.	@ Rs. 160/- p.m. x 12	Rs. 1920/-
One U.D.C.	@ Rs. 124/- p.m. x 12	Rs. 1488/-
One L.D.C.	@ Rs. 75/- p.m. x 12	Rs. 900/-
		<hr/> Rs. 6246/-

U. G. C.'s (50%) contribution for the 1st year for new appointments :—

1. One Supdt.	(250-1- $\frac{1}{2}$ -375) 250 x 12	Rs. 3000/-
2. One U. D C.	(100-8-180-10-229) 100 x 12	Rs. 1200/-
3. Two Peons	(25-1-35) Rs. 25 x 12 x 2.	Rs. 600/-
		<hr/> Rs. 4800/-

Add 45% on account of P. F. contribution,

D. A. and House Rent.	Rs. 2160/-
	<hr/> Rs. 6960/-

The U. G. C. does not agree to pay more than Rs. 6000/-. The only additional financial liability to the University therefore is as follows:-

12000/- (6246 plus 6960) Rs. 1206 per annum.

In other words the saving to the University will be 6246

1206

Rs. 5040 P. A.

In terms of all this additional staff, which is now inevitable for efficient working and running of the unit for U. G. C. work. The Unit will also do all statistical work, correspondence with U. G. C. and correspondence with Govt. of India and State Govt. at present attended to by the General Section. The additional ministerial staff to be recruited

ted should possess the following qualifications :-

1. Superintendent:- (i) Having post-graduate degree in Mathematics with Mathematical Statistics as one of his optional papers in M. A. or M. Sc.
or
(ii) Having a post-graduate degree in Statistics.
and (iii) Having some experience of practical work in Statistics.
(iv) Has passed in General English at the degree examination.
(v) Has preferably adequate experience of working in an office.
2. One U. D. C.—1. At least Graduate (B. Com.) having knowledge of accounts work and good at type-writing.
2. Previous experience of office work.

The new unit be deemed to have been set up from the date the Syndicate has approved of the Scheme. The matter may be placed before the Syndicate to be held on 12.8.58 after the Vice-Chancellor has approved of it.

In the meantime the post of Superintendent and U. D. C. may be advertised.

Sl. No.	Centre.	Subject & Paper.	Roll No. & name of candidate.	of s ers.
1	2	3	4	
1.	S. D. Govt. College, Beawar.	Sociology Paper IV.	69 M.R. Kumbhat.	, 57 17
2.	Govt. College, Ajmer.	General English.	84 Prit Singh.	Nil 5.
3.	Dung?			

Remarks of the Registrar.	Decision of the Results Committee.
11	12
<p>Calls for serious consideration in view of his rough conduct.</p>	<p>The present examination of the candidate b^a cancelled and he be further debarred from appearing at any examination of the University to be held in 1959.</p>
<p>main- A clear case of unfairmeans.</p>	<p>—do—</p>
<p>sub- A clear case of unfairmeans.</p>	<p>—do—</p>
<p>main- The papers were found on his desk which clearly shows foul intention even though he may not have made use of the</p>	<p>—do—</p>

APPENDIX VIII

(Ref. Syndicate Res No. 54 (xxi) of August 12, 1958)

Statement of Provident Fund withdrawals (1957-58)

Sl. No.	Name.	Amount	Number of Instalments	Rate of Instalments	Date of V. C.'s orders.
		Advanced			
		Rs.		Rs.	
1.	Shri R. P. Sharma	600/-	12	50/-	April, 57
2.	„ H. L. Chaturvedi.	150/-	3	50/-	6.4.57
3.	„ K. N. Nag.	700/-	28	25/-	30.4.57
4.	„ H. D. Sinha.	300/-	30	10/-	9.5.57
5.	„ G. C. Chatterjee.	6,700/-	30	225/- & last instalment of Rs. 175/-	7.5.57
6.	„ R. K. Mittal.	216/-	27	8/-	7.5.57
7.	„ P. G. Phadke.	150/-	10	15/-	15.5.57
8.	„ M. L. Varma.	260/-	10	26/-	20.5.57
9.	„ K. S. Mital.	125/-	25	5/-	26.5.57
10.	„ K. K. Bhatt.	450/-	30	15/-	5.6.57
11.	„ R. P. Srivastava.	600/-	30	20/-	June, 57.
12.	„ S. R. Mittal.	144/-	16	9/-	8.6.57
13.	„ B. L. Saraf.	225/-	25	9/-	8.6.57
14.	„ Laxman Prasad Agarwal.	210/-	14	15/-	27.5.57
15.	„ S. N. Agarwal.	120/-	13	10/-	4.6.57
16.	„ H. S. L. Gupta.	600/-	20	30/-	16.7.57
17.	Dr. D. L. Gupta.	2,400/-	30	80/-	5.7.57
18.	Shri J. P. Srivastava.	640/-	16	40/-	10.8.57
19.	„ G. S. Bhatta.	200/-	20	10/-	31.7.57
20.	„ G. C. Chatterjee.	7,300/-	30	225/-	4.9.57
21.	„ A. T. Keswari.	145/-	Deduced back on 24.8.57		
					21.8.57.

22.	Shri B. L. Sharma.	810/-	30	27/-	26.9.57
23.	„ G. S. Pareek.	350/-	25	14/-	14.10.57
24.	„ U. M. Sogani.	200/-	8	25/-	28.9.57
25.	Dr. M. L. Sharma.	3,000/-	10	300/-	Oct., 57
26.	Shri S. N. Mathur.	300/-	10	30/-	18.11.57
27.	„ D. P. Mathur.	900/-	30	30/-	Nov., 57
28.	„ K. D. Goswami.	600/-	10	60/-	Nov., 57
29.	„ H. C. Mathur.	450/-	30	15/-	4.11.57
30.	„ R. P. Srivastava.	650/-	26	25/-	Nov., 57
31.	„ M. K. Sharma.	400/-	20	20/-	30.9.57
32.	„ O. P. Bhargava.	375/-	15	25/-	15.11.57
33.	„ R. S. Pushkarna.	300/-	12	25/-	19.11.57
34.	„ K. P. Govil.	1,500/-	30	50/-	29.11.57
35.	„ M. K. Jain.	144/-	12	12/-	19.11.57
36.	„ Moti Singh Peon.	40/-	10	4/-	18.11.57
37.	„ S. K. Bhatt.	750/-	30	25/-	14.11.57
38.	„ V. D. Qamra.	200/-	10	20/-	4.11.57
39.	„ S. S. L. Gupta.	63 /-	13	49/-	Dec., 57
40.	„ Laxmi Narain Cyclesawar.	150/-	15	10/-	28.11.57
41.	„ B. L. Srivastava.	870/-	29	30/-	14.12.57
42.	„ B. B. Sharma.	100/-	10	10/-	Dec. 57
43.	„ B. N. Mathur.	640/-	16	40/-	19.12.57
44.	„ J. S. Bhargava.	600/-	30	20/-	3.12.57
45.	„ B. L. Varma.	900/-	30	30/-	Dec., 57
46.	„ J. N. Mathur.	700/-	14	50/-	14.12.57
47.	„ Lalita Prasad Agarwal.	500/-	20	25/-	6. 1.58
48.	„ A. T. Keswani.	40/-	4	10/-	7. 1.58
49.	„ Laxman Prasad Agarwal.	380/-	19	20/-	10. 1.58
50.	„ G. S. Tikkiwal.	900/-	30	30/-	9. 1.58

51.	Shri Magan Lal Varma.	325/-	13	25/-	23. 1.58
52.	„ P. C. Bairathi.	200/-	20	10/-	5. 2. 58
53.	„ G. C. Chatterjee.	8,100/-	20	386/- &	5. 2. 58
				the last instalment	
				of Rs. 380/-	
54.	„ P. G. Phadke.	250/-	10	25/-	11. 2.58
55.	„ N. K. Bhargava.	1,400/-	28	50/-	26. 2.58
56.	„ U. M. Sogani.	350/-	14	25/-	25. 2.58
57.	„ M. C. Singhal.	600/-	12	50/-	6. 3.58
58.	„ Girraj Sharan Sharma.	600/-	20	30/-	6. 3.58
59.	„ K. P. Govil.	1,770/-	30	59/-	3. 3.58
60.	„ I. C. Saxena.	1,500/-	7	200/- &	
				the last of Rs. 100/-.	15.3.58
61.	„ P. C. Bairathi.	540/-	27	20/-	27.3.58

MINUTES OF A MEETING OF THE SYNDICATE
HELD ON SATURDAY, THE 11TH OCTOBER,
1958, AT 2. 00 P M. AT THE UNIVERSITY
OFFICE, JAIPUR.

PRESENT :

Prof. G. C. Chatterji, Vice Chancellor

(In the Chair)

2. Shri K. K. Chaturvedi
3. Shri S. S. Saxena
4. Shri C. B. Gupta
5. Pt. Devi Shanker Tiwari
6. Mrs. Sharda Bhargava
7. Shri M. M. Varma
8. Dr. (Miss) R. P. Shastri
9. Shri B. D. Bhargava
- Shri K. L. Varma

(Registrar)

The minutes of the meeting of the Syndicate held on the 12th August, 1958, were confirmed.

The Syndicate desired that the practice of sending cyclo-styled copies of minutes of its meeting to the members soon after their approval by the Vice-Chancellor be resumed and that for purposes of supply to the members of the Senate they be printed only after their confirmation at the next meeting of the Syndicate.

2. With reference to its Res. No. 26, dated the 12th August, 1958 the Syndicate considered the recommendations made by the Sports Board at its meeting held on the 5th and 6th May, 1958, and 7th August, 1958, respectively (*vide Appendices I & II*).

Resolved that—

- (i) the recommendations made by the Sports Board be

approved except as provided below:—

(Ref:—Recommendation No. 2, dated the 5th May, 1958)

The University Tournament Rules for Boys be adopted with the following modifications:—

General

Rule 1 (a)—Add "affiliated to the University" after 'colleges' in line 2.

Rule 1 (b)—Read as—

"Students can represent their colleges and University Departments for the number of years as is permissible for participation of a University in Inter-University contests under the rules laid down by the Inter-University Board."

Eligibility

Rule VI (e) (i) N. B.—

Substitute "shall be a senior member of the staff, who will be responsible for the conduct and discipline of the students during the tournament" for "should preferably by the P. T. I.", and "one of them should be on the playgrounds when their team plays" for "and be generally with the teams". Also insert—"and the State Government" between "colleges" and "to enforce" in the last but one line.

Rule VI (e) (iii)—

Substitute "report to the Sports Board which may recommend to the University to disqualify or impose any penalty on the college" for "may recommend to the Sports Board to disqualify a college".

Financial

Rule II (iii) 'd)—

Add 'number of' between 'the' and 'volunteers' and "as determined by the Principal of the college" after "duty" in lines 15 and 16.

Rule VI (e)—Add "as advance" after "paid" and before "to the manager."

Rule VII (a)—Add "at the latest" after '31st January' in line 8 and substitute "will be liable to" for 'will' in the same line.

Rule VII (c)—Add the word "after" before "the tournament is over" and add "under intimation to the Registrar" at the end.

Rule IX— Substitute "teachers in charge of teams from competing colleges" for "competing colleges".

Miscellaneous

Rule 7 —Substitute "beyond" for "behind" in line 3, and "from" for "by" in line 4.

Rule 9 (1)—Substitute "must" for "can" in line 2 and "inauguration" for "commencement" in line 4.

Rule 9 (2)—Add "-do-" after "Table Tennis"

Rule 12 —Delete "one technical and one non-technical" at the end of 1st paragraph; and substitute "a suitably qualified" for 'any suitable' in the second paragraph.

Rule 12 (a)—Add "each of the games" after "in" and before "Hockey" in the last line.

Rule 12 (b)—Add "each of the games" after "in" and before "In Tennis" in line 3.

Ref. Recommendations Nos. 7 & 8, dated 7th August, 1958:—

The rules recommended for 'Tournament for Women' and the 'Special Rules for the conduct of Games and Sports' be scrutinised in the office and any verbal changes in the same may be brought to the notice of the Vice-Chancellor who may pass orders after consulting the Convener of the Sports Board.

Ref. Recommendation No. 9, dated the 7th August, 1958:—

Since due to his transfer to N. C. C. it had become rather difficult for Shri L. R. Soni to render adequate assistance to the Convener, Sports Board, in the performance of his duties, for which he had been appointed (vide Syndicate Res. No. 14 (2), dated the 20th January, 1952), the recommendation of the Board to relieve Shri Soni of his duties be accepted and the Convener of the Sports Board be asked to recommend a suitable name in place of Shri Soni to the Vice-Chancellor for his consideration.

(ii) The following action taken by the Vice-Chancellor on the recommendations of the Sports Board, made at its meeting held on the 7th August, 1958, to avoid delay be *confirmed:—*

(a) Recommendation (No. 1) with regard to deputing University teams to participate in the Inter-University Tournaments for the year 1958-59 was approved with the modification that University teams be not sent in the events of Basket-ball and Hockey.

(b) Recommendation No. 5 with regard to venues for the University Zonal and Central Tournaments, 1958 was approved with the modification that instead of sending the inspection committee to Beawar College (venue for the Central Tournament) for the second time, a report from the Principal be called for by the 7th October, 1958 together with a certificate to the effect that the fields, play-grounds and tracks etc. were perfectly ready for holding tournaments and that the necessary athletic material had been purchased by the college.

(iii) A committee consisting of the following persons be appointed to define the duties and functions of the Sports Board:—

1. Shri S. S. Saxena
2. Shri Bhim Sen

3. Shri B. D. Bhargava; and

4. Registrar (*Convener*).

3. With reference to Senate Resolution No. 9, dated the 8th December, 1957, the Syndicate considered the following proposal of Prof. S. D. Derashri in regard to revision of minimum scales of pay recommended for teachers of affiliated colleges under O. 66 of the University Hand Book Part II (postponed last time) :—

PROPOSAL

“Resolved that O. 66 be amended so as to read as follows :—

The following are recommended as the minimum scales of emoluments in the affiliated colleges :—

1. Principals of Post Graduate Colleges— Rs. 800-50-1200.
2. Principals of degree colleges Rs. 500-25-700-EB-30-850.
3. Principals of Inter. colleges— Rs. 300-25-650-EB-30-700.
4. Heads of Post-graduate Deptts.— Rs. 500-25-700-EB-20-850.
5. Heads of Degree Departments— Rs. 300-25-500-EB-30-700.
6. Lecturers in Degree & Post-graduate colleges— Rs. 250-15-400-EB-25-600.
7. Lecturers in Inter. colleges— Rs. 200-10-280-EB-15-400-25-450.
8. Physical Instructors (who are graduates & possess a diploma in Physical Education).— Rs. 200-10-280-EB-15-400-25-450.
9. Librarians (who are graduates & possess a diploma in Library Science).— Rs. 200-10-280-EB-15-400-25-450.

10. No full time member of the teaching staff, including a Demonstrator in an affiliated college be given a salary of less than Rs. 200/-per month.

In this connection, the Syndicate also considered the minimum scales of pay recommended by the University Grants Commission, as communicated by the Secretary, University Grants Commission, vide his letter No. F. 36-40/56 (H), dated the 28th February, 1958.

Resolved that the following minimum scales of pay be recommended for the affiliated colleges and that O. 66 be amended accordingly :—

- | | | |
|--|--|---------------------------------------|
| 1. Principals of Post-graduate colleges— | Rs. 800-50-1200 (Special grade). | |
| 2. Heads of Post-graduate Deptts— | Rs. 500-25-700-EB-30-850
(Special grade). | |
| 3. Physical Instructors
(who are atleast graduates and possess a diploma in Physical Education) — | Rs. 200-10-280-EB-15-400-25-450. | |
| 4. Librarians (who are at least graduates and possess a diploma in Library Science).— | Rs. 200-10-280-EB-15-400-25-450. | |
| 5. Principals of Degree colleges.— | Rs. 600-10-800 | } Same as recommended by the U. G. C. |
| 6. Heads of Degree Departments— | Rs. 400-25-700 | |
| 7. Lecturers in degree and postgraduate colleges— | Rs. 200-15-320
20-500. | |
| | | |

8. No full time member of the teaching staff, including a Demonstrator in an affiliated college be given a salary of less than Rs. 200/- per month.

4. With reference to its Res. No. 43, dated the 12th August, 1958 the Syndicate considered the recommendations of the

Committee appointed to consider the question of creation of a separate section in the University office for expeditious supply of statistical and other information required by the University Grants Commission, made at its meeting held on the 29th September, 1958 (*Appendix III*).

Resolved that the recommendations made by the Committee be approved.

5. With reference to its Res. No. 46, dated the 12th August, 1958, the Syndicate considered the drafts of the following documents (*vide Appendices IV, V and VI*) as approved by Dr. R. N. Varma, Reader, University Law College, Jaipur (postponed last time) :—

- (i) Agreement Form to be executed by the University and Printers/Suppliers.
- (ii) Certificate to be furnished by a Tenderer/Printer along with his tender.
- (iii) Conditions of Tender and Contract.

Resolved that the drafts of the above documents be approved.

6. The Syndicate considered whether the following clause (g) be added to Ordinance 16 of the University Hand Book Part II so that a ballot paper may be deemed invalid if the outer envelope containing the same is not sealed by the voter :

“or (g) the outer envelope, containing ballot paper is received unsealed”.

Resolved that the existing practice be continued.

7. The Syndicate considered the question of prescribing fee for setting a question-paper and marking each script for the M.A. examination in the case of a question-paper which is divided into two sections—each section of which is to be set and marked by a separate examiner.

In this connection, the Registrar reported that, at present, in the absence of a rule, half setting fee and full marking fee was paid to the examiner for each section at the M. B., B.S. Examina-

tion and full setting fee and full marking fee for each section at the M. E /M. Sc. (Electronics) Examination under orders of the Vice-Chancellor.

Resolved that as done in the case of M. B., B. S. Examinations, half setting fee and full marking fee be paid in a case where a question paper is divided into 2 sections, each section of which is set and marked by a separate examiner.

8. The Syndicate considered the question of deputation of one or two delegates on behalf of the University to participate in the Seventieth Anniversary of the University of Allahabad to be held some time in December, 1958, as requested by the Vice-Chancellor of the Allahabad University vide his D. O. letter No. nil, dated the 5th August, 1958. addressed to the Vice-Chancellor of this University.

Resolved that Shri B. D. Bhargava, Principal, Commerce College, Jaipur and Shri K. L. Varma, Registrar of the University be deputed to participate in the 70th Anniversary of the University of Allahabad.

9. The Syndicate considered the reports of the Inspectors appointed by the Vice-Chancellor to pay surprise visits to examination centres for the examinations of 1958.

In this connection the Registrar reported that the irregularities pointed out by the Inspectors had already been brought to the notice of the centre Superintendents.

Resolved that the reports of the Inspectors be recorded.

10. The Syndicate considered whether the diplomas of L. M. P. of Bombay, Bihar, etc. and L. M. F. of Calcutta (State Medical Faculty of West Bengal) be recognised for the purpose of admission to the condensed M. B., B. S. Course of the University in view of the fact that these diplomas had been recognised by the Medical Council of India under Schedule III and as such were fit to be recognised by the University.

Resolved that the diplomas of L. M. P. of Bombay, Bihar, etc. and L. M. F. of Calcutta (recognised by the Medical Council

of India) be recognised for the purpose of admission to the condensed M. B. B. S. course of the University.

11. With reference to the Academic Council resolutions Nos. 33 and 34 dated 25th February 1958, the Syndicate considered the recommendations of the Science Sub-Committee of the University Education Re-organisation Committee made at its meeting held on the 1st October 1958 (*vide Appendix VII*) on the recommendations of the Faculty of Engineering and Technology, with regard to making the Engineering degree course a 5-year course instead of the present 4-year course as a sequel to the introduction of the Higher Secondary Examination in place of the High School Examination, and other allied questions.

Resolved that the recommendations of the Committee be approved.

12. The Syndicate considered the recommendations of the Committee for the Selection of Examiners, made at their meetings held in August, 1958 for the appointments of paper-setters, co-examiners and practical examiners for the University Examinations of 1959.

In this connection, the Registrar reported the orders passed by the Vice-Chancellor in issuing invitations to the paper-setters* not coming under the purview of the rules proposed for consideration of the Syndicate and adopted by it under 12(1) (a), (b), (c) below in anticipation of Syndicate approval, to avoid delay in printing of question-papers.

The Registrar further reported that the Vice-Chancellor had appointed paper-setters and practical examiners in Geography for the examinations of 1959 according to rules, as the meeting of the Examination Committee in the subject could not be held.

Resolved that—

1. The recommendations made by the Committee for the Selection of Examiners be approved subject to the

following modifications :—

- (a) A person who has already been allotted an M. A. paper in which the number of examinees is more than one hundred, be not given in addition a degree examinership.
- (b) Two theory examinerships at the degree stage be not given to one and the same person. One theory and one practical examinership could, however, be given to one person.
- (c) Persons not possessing the requisite experience of a particular standard be not appointed as examiners of that standard unless absolutely necessary.

The list of examiners be scrutinised in the light of the above and the resultant vacancies be filled up by the Vice-Chancellor.

2. The orders passed by the Vice-Chancellor in—
 - (a) issuing invitations to the paper-setters (referred to above at³); and
 - (b) appointing paper-setters and practical examiners in Geography for the examinations of 1959 be confirmed.

13. Under Section 20 (2) (iii) & (iv) of the University Act, the Syndicate nominated Shri M. M. Varma as a member from among the members of the Syndicate to serve on each of the Selection Committees for the appointment of (i) a Reader and (ii) Workshop Superintendent in the University Department of Geology, Udaipur, and (iii) confirmed the orders dated the 5th September, 1958, passed by the Vice-Chancellor in recommending on its behalf the names of the following experts to be appointed by the Chancellor for serving on the aforesaid Committees :—

Committee of Selection for the Post of a Reader :

1. Dr. M. R. Salmi, Chandigarh.
2. Dr. A. G. Jhingran, Calcutta:

3. Dr. P. K. Ghosh, New Delhi (if any of the above two is not available).

**Committee of Selection for the Post of a Workshop
Superintendent :**

1. Shri V. G. Garde, Jodhpur.
2. Shri Prithvi Singh, Superintending Engineer, Electrical & Mechanical Department, Jaipur.

14. With reference to its Res. No. 11, dated the 12th August, 1958, approving of recommendation No. 7 of the Academic Council made at its meeting held on the 25th February, 1958, under which it had not permitted Shri Munshi Lal, B. V. Sc. and A. H. degree-holder of the Agra University, Lecturer in Medicine, Rajasthan College of Veterinary Science & Animal Husbandry, Bikaner, to appear at the M. A. (Previous) Examination of the University and had referred the question of defining the scope of the term 'Bachelor's degree' contained in O. 211 to the Faculty of Arts, the Syndicate considered a representation made by the candidate to the effect that Res. No. 7 passed by the Academic Council in relation to him was in contravention of the existing O. 211 of the University Hand Book, which admitted a candidate possessing a Bachelor's Degree of the University or of an Indian University to the previous examination for the degree of Master of Arts and included all graduates, and requesting that in the circumstances he be permitted to appear at the M. A. (Previous) Examination in Economics of this University, adding that the Agra University also permitted a B. V. Sc. and A. H. to appear at its M. A. Examination in Economics.

In this connection, the Registrar reported that the Syndicate, vide its Res. No. 7, dated the 28th January, 1958 had approved of the recommendations, of the Committee appointed by the Vice-Chancellor to scrutinise the Hand Book Part II of the University in the light of the Rajasthan Secondary Education Act, 1957, according to which the term 'Bachelor's degree' contained in O. 211 included the B. A., B. Sc., B. Com. and the B. Sc. Ag. Examinations only.

Resolved that, pending consideration of the question by the Faculty of Arts and other bodies, the candidate Shri Munshi Lal be allowed to appear at the M. A. Previous Examination of the University in Economics as a special case.

15. With reference to O. 138 the Registrar reported that the referees, appointed to examine the theses submitted by each of the following candidates on the subject noted against each had unanimously recommended that the degree of Ph. D. be conferred by the University on each of them :—

1. Shri Jeth Mal Joshi—"Economic Conditions of Rajasthan".
2. Shri S. R. Venkat Subha Rao—"A contribution to our knowledge of the cytology of Homoptera — Auchenorrhyncha".
3. Shri Shyam Shanker Dixit—"Parmanand Dass-His Life and Works".

Resolved that, as recommended by the referees, the degree of Ph.D. be awarded to each of the candidates mentioned above on the subject noted against each.

16. With reference to the revised Ordinance 254 approved by it at its meeting held on 28th January, 1958, regarding combination of Law and post-graduate studies, the Syndicate confirmed the clarification given by the Vice-Chancellor in conformity with its Res. No. 17 of even date, that students who had the combination of Law and Post-graduate studies during the session 1957-58 or earlier would be permitted to take two main post-graduate examinations (not two finals in one and the same year, not beyond the examination of 1959, provided they were otherwise eligible under the rules for appearing at these examinations, and *resolved that* O. 254 be amended in the light of the same so as to read as follows :—

O. 254 Candidates shall in no case be allowed to combine Law and other Post-graduate studies, provided that a stu-

dent who had the combination of Law and another subject of post-graduate study during the session 1957-58 or earlier shall be permitted, if otherwise eligible, to take two post-graduate examinations (not two finals) for the examination of 1959 only, and not beyond that either as an ex-student in one subject and a regular student in another or as an ex-student in both.

17. With reference to its Resolution No. 30, dated the 12th August, 1958, the Registrar reported that the Secondary Board of Education, Rajasthan having decided to commence its Intermediate and High School Examinations on 9th March 1959, the question of postponement of the commencement of University Examinations of 1959 by about a week did not arise and that the same dates as were originally proposed to the Syndicate at its last meeting had been retained.

18. The Syndicate considered the question of framing grace marks rules for the examinations in the Three-Year Degree Course in the Faculties of Arts, Science and Commerce and for the Pre-University Examination.

In this connection the Syndicate considered an office suggestion that for the First Year and the Pre-University Examinations same grace marks as were prescribed by the Rajputana University for its Intermediate Examinations and those followed by the University for its present degree examinations be adopted for the second and the third year examinations also of the Three Year Degree Course.

Resolved that the office suggestions be approved.

19. The Syndicate considered a proposal to amend O. 376 F of the University Hand Book Part-II (providing for retention of a University Employee in Service after the age of Superannuation) so that the extension, if granted after the age of retirement (which is 60 years), be for a full period of 3 years and not year by year as required under the present provision of the ordinance. Ordinance 376 F, if amended, would read as follows:

"The date of compulsory retirement of all permanent whole-

time servants of the University is the day on which he attains the age of 60 years. An officer may be retained in service after the date of compulsory retirement in very special circumstances, which must be recorded in writing and such an extension be given for a period of not more than three years, provided the officer concerned remains fit for duty".

In this connection, the Syndicate took into consideration the view of the Vice-Chancellor that if the special circumstances existed for the retention of an employee of the University for a further period, he should not be put to a sense of insecurity which arose under the present Ordinance.

Resolved that the proposal be referred for examination and report to a Committee consisting of :—

- (i) The Vice-Chancellor,
- (ii) Shri M. M. Varma,
- (iii) Shri S. S. Saxena and
- (iv) Shri Devi Shanker Tiwari.

Resolved further that the practice obtaining in this behalf in Bombay, Madras, Calcutta, Allahabad, Delhi, Agra and Lucknow Universities be obtained and placed before the Committee.

20. With reference to its Res. No. 23, dated the 12th August, 1958, under which it was decided that no increase in the prices of the books (university publications for High School and Intermediate Examinations, now prescribed by the Board of Secondary Education, Rajasthan for its examination of 1960) be permitted, and that the publishers might use 24 lbs. of paper instead of 28 lbs. as used heretofore, and bring out the books immediately, failing which the University will cancel the contract, the Syndicate considered the matter further in the light of a letter No. 20333, dated the 18th September, 1958, since received from the Secretary of the Board of Secondary Education, Rajasthan, Jaipur, informing that the following books had not been placed in the market by the publishers concerned.

Name	Publishers
1. High School Prose Selection by Shri B. S. Paul.	M/S. Gaya Prasad & Sons, Agra,
2. Rapid Reader for High School classes by Shri R. S. Tripathi.	M/S. Gulab Singh & Sons, Delhi.
3. Hindi Gadya Padva Sangrah by Shri K. L. Sahal.	M/S. Gulab Singh & Sons, Delhi.

In this connection the Registrar reported that a letter No. 2611, dated the 6th October, 1958 had since been received from the Manager, M. Gulab Singh & Sons, Private Ltd., New Delhi, assuring that the Rapid Reader for High School classes and the Hindi Gadya Padya Sangrah (in the press) would be ready for sale during the course of the next week or so.

Resolved that—

1. letter received from M. Gulab Singh & Sons be recorded and the Secretary of the Board of Secondary Education be apprised of the position.
 - 2 M/S. Gaya Prasad & Sons, Agra be informed that if the book is not brought out and placed in the market immediately legal action will be taken against them, in terms of the agreement.
21. The Vice-Chancellor read out a letter received by him from the Chief Minister, Government of Rajasthan enclosing extract from a fortnightly letter dated the 19th June 1958 (*vide Appendix VIII*) addressed by the Prime Minister of India to the Chief Minister on (1) the desirability of prescribing a period of compulsory service for all young men and women between certain age limits and (2) requiring every graduate (including Medical and Engineering graduates), before he or she gets his or her degree, to put in a certain period of work in an allotted sphere according to his or her training and capacity in a village or a tribal area.

Resolved that the matter be referred to the University Education Re-organisation Committee for consideration and report.

Resolved further that all papers received in this connection hereafter be also referred to the same Committee. .]

22. With reference to its Res. No. 51, dated the 12th August, 1958, accepting the resignation of Shri R. K. Agarwal from the post of Deputy Registrar of the University, and postponing consideration of the question of making the officiating arrangements made for the leave-period of Shri Agarwal permanent so as to enable the Vice-Chancellor to give his careful consideration to the matter the Syndicate considered the proposals made by the Vice-Chancellor and *resolved that—*

1. Shri C. L. Singhal be confirmed as Deputy Registrar with effect from 1st November, 1958 on Rs. 625/-p.m. in the grade of Rs. 500-25-750.
2. Shri K. P. Govil be confirmed as Asstt. Registrar with effect from 1st November, 1958 on Rs. 420/- p.m. in the grade of Rs. 400-20-500.
3. Shri J. N. Mathur be confirmed as Office Superintendent (General) with effect from 1st November, 1958 on Rs. 262/8/- p. m. in the grade of Rs. 250-12½-375.
4. Shri M. C. Singhal be confirmed on Rs. 220/- p. m. with effect from 1st November 1958 in the Senior Assistant's grade of Rs. 150-10-250.
5. Shri P. N. Mathur, who was officiating for Shri M. C. Singhal, be reverted to the L. D. C.'s post.

In this connection, the Registrar pointed out that some of the above promotions would adversely affect some persons in the office who were senior to them both in length of service as well as in pay and were holding higher appointments prior to the above promotions.

Resolved that the cases of such persons be brought up before the Syndicate at its next meeting for consideration.

23. The Syndicate confirmed the followidg orders passed by the Vice-Chancellor :

- (i) Orders dated the 4th June, 1958, sanctioning leave on full pay on medical grounds for 19 days to Shri S. N. Mathur, Assistant Librarian, with effect from 9th June, 1958 to 27th June, 1958 (both days inclusive).
- (ii) Orders dated the 8th September, 1958, approving on the recommendation of the Dean, the draft of the diploma for the degree of Doctor of Science to be awarded for the first time at the forthcoming Convocation (*vide Appendix IX*) .
- (iii) Orders dated the 8th September, 1958, appointing Dr. R. N. Varma, Lecturer in the University Law College, Jaipur, as a temporary Reader with effect from the 26th August 1958 on Rs. 560/- p. m. in the grade of Rs. 500-30-830.

Dr. Varma was the senior most Lecturer in the college and had been working as such since 26th November, 1957. The Selection Committee for the post of Principal, University Law College, held on 18th July, 1958, had also interviewed Dr. R. N. Varma and observed that Dr. Varma would be quite suitable for the post of a Reader.

- (iv) With reference to University Ordinance 365 according to which a person should have put in 12 months' service before he could be granted leave on full pay, the orders dated the 12th August, 1958 of the Vice-Chancellor in condoning shortage of 1 day's service and granting leave on half pay for 30 days (commuted to leave on full pay for 15 days) to Shri K. Vishwanathiah, Lecturer in the University Department of Economics & Public Administration on account of his own marriage. Shri Vishwanathiah completed 12 months of his service on 15.8.58, whereas he was granted leave with effect from 14. 8. 58.

(v) Orders dated the 28th August, 1958, in sanctioning T. A. from Udaipur to Banswara and Ajmer to Banswara and back via Dohad to Messrs. S. S. Saxena, Principal, M. B. College, Udaipur and Bhim Sen, Principal, Government College, Ajmer who had gone to inspect Government College, Banswara in connection with its application for affiliation to the Degree standard with effect from the session 1958-59, during the month of August, 1958 which is a longer route with no saving of time. The circumstances under which the T. A. by longer route was sanctioned were that owing to rainy season the rivers near Banswara were in spate and the Journey by the shortest route was unsafe and uncertain.

(vi) Orders dated the 9th September 1958 in sanctioning leave to Dr. M. L. Sharma, Head of the University Department of History on half pay for 20 days commuted to leave on full pay for 10 days for the following dates in connection with his association with the U. P. S. C. in certain interviews at Delhi.

22nd July 1958.

24th July 1958.

25th July 1958.

29th July to 31st July 1958.

4th, 5th, 12th, and 13th August, 1958.

(vii) Orders in approving of the ad-hoc arrangements recommended by the Heads of the University Departments concerned for providing lodging facilities to a few students of their Departments at Jaipur who stood in real need of the same:—

(1) Orders dated the 12th August 1958 for hiring a building belonging to Mr. Mohanlal Vaid, situated on the Rambagh Road, Jaipur on a monthly rent of Rs. 145/— (exclusive of electricity and water charges) which can accommodate 9 students

to serve as a University lodge for the University Department of Economics and Public Administration.

- (2) Orders dated the 23rd September, 1958 for hiring another building (C-124 Bapu Nagar) on a monthly rent of Rs. 85/- for the students of the University Department of Economics and Public Administration.
- (3) Orders dated the 24th September, 1958 for hiring a buildidg of Shri Bhagchand on plot No. C-117 'A' in Gandhinagar, Jaipur, on a monthly rent of Rs. 125/— for the students of the University Law College, Jaipur.

For single seated rooms a rent of Rs. 12/— p. m. and for double seated rooms rent at Rs. 10/— per student be charged and water and electric charges etc. be borne by the students of the lodge concerned. The University will provide furniture for the students of these lodges and also pay the difference between the rent for each lodge minus rent collected from students as subsidy. The Heads of Departments will depute a senior teacher of their Department to supervise these lodges.

The meeting ended with a vote of thanks to the Chair.

G. C. Chatterji
Vice-Chancellor,

K. L. Varma
Registrar.

APPENDIX I

(Ref. Syndicate Res. No. 2 of October 11, 1958)

Minutes of the meeting of the Board of Sports held in the University office on the 5th May 1958 at 12. 30 p. m. and on the 6th May 1958 in the Commerce College, Jaipur at 8 a. m.

Present :

1. Shri S. S. Saxena
2. Shri S. N. Bhaya
3. Shri R. L. Verdia
4. Shri Shambhu Lal Sharma
(on the 5th May only)
5. Miss P. B. Menon
9. Shri B. D. Bhargava
(Convener)

1. The minutes of the meeting of the Board of Sports held on the 7th August 1957, were confirmed.

2. The Board considered the re-drafted University Tournament Rules (for boys) together with the suggestions received from the Principals of affiliated colleges with regard to amendment in the Tournament Rules.

Resolved that—

- (i) the revised rules as given in *Appendix* be adopted in the University tournaments for the year 1958 and onwards.
- (ii) with regard to rules for matches the Sports Board was of the opinion that the University should compile rules of matches which are followed by the Inter-University Sports Board and it should publish the same at a moderate price. A Committee consisting of the following was appointed for compiling the rules for matches which will ordinarily meet at Udaipur :—

1. Shri R. L. Vardia

2. Shri S. N. Bhaya
3. Miss P. B. Menon
4. Shri S. S. Saxena

(Convener)

(iii) that Miss P.B. Menon be requested to re-draft the Girls Tournament Rules in the light of the suggestions received from different colleges and in the light of the revised Tournament rules for boys and send the same to the Convener Sports Board.

3. The Board considered letter No. Gen/8429, dated the 19th July 1957 from the Principal, Rajasthan College of Agriculture, Udaipur drawing the attention of the University to the fact that appointment of a whole time Physical Instructor has been enforced as an essential condition for granting affiliation to his college while the purpose could very well be served by entrusting the job of supervising Games and Sports to one of the teachers interested in such activities by giving him a suitable allowance as in his views the wholetime Physical Instructors were necessary only for big colleges having more than 500 students on rolls. The Board also considered the views of the Vice-Chancellor that the regulation with regard to Physical Training Instructors was framed mainly in a connection with Arts and Science Colleges. Professional and Technical Colleges come in a different category and so it should not be necessary to have a wholetime Physical Training Instructor in Professional colleges, e. g. Agricultural and Engineering colleges etc.

The Board did not favour this view and *resolved that* to be on sure ground, the University should collect information from other States and Universities on this subject before it could arrive at a final decision in the matter.

4. The Board postponed consideration of the reports of the University Tournaments for the year 1957 for the next meeting of the Board to be held in July 1958.

5. The Board considered the replies received from the Principals of the following colleges which had extended invitation for

holding the University Tournaments (1958), and informed the University in connection with the facilities existed at their colleges for holding the tournaments for the year 1958.

1. Govt. College, Ajmer. (Zonal Tournament-1st zone)
2. Govt. College, Bhilwara (Zonal Tournament-2nd zone)
3. S.D. Govt. College, Beawar (Central Tournament)
4. Rajasthan Mahila Vidyalaya, Udaipur (Girls Tournament).

Resolved that—

i) the venue for Zonal Tournament at Government College, Ajmer and Girls Tournament at Rajasthan Mahila Vidyalaya, Udaipur be approved.

ii) that the facilities regarding grounds etc. for holding the Central Tournament at S. D. Govt. College, Beawar and Zonal Tournament (second zone) at Govt. College, Bhilwara be first examined by the following members :—

1. Shri S. N. Bhaya, P. T. I., R.R. College, Alwar.
2. Shri S.S. Saxena, Principal, M.B. College, Udaipur

Convener)

Failing them the Convener (Shri B. D. Bhargava) and Shri R. L. Verdia may inspect the colleges and the venues for the Zonal Tournament (second zone) and Central Tournament be decided on the recommendation of the Inspectors.

6. The Board considered the report of the Secretary, Rajasthan University Central Tournament 1957, held at M. S. J. College, Bharatpur and *resolved that* A. P. Cox Jodhpur Gold Medal be awarded to Shri Harwant Singh of Dungar College, Bikaner for being the best athlete of the year 1957-58.

7. The Board postponed consideration of the proposal for organising debates in English and Hindi at the time of the Univer-

sity Central Tournament (as referred to it by the Board of Sports Resolution No. 11(y of 7.8.1957).

8. Under Rule No. 1 (h) (i) of the University Tournament Rules, the Board appointed that the following representatives of the Sports Board be members of the Zonal Tournaments Committees at the Zones mentioned against each for the year 1958-59 :—

- | | |
|-----------------------|----------------------------|
| 1. Shri S. N. Bhaya | First zone at the |
| Physical Training | Government College, Ajmer. |
| Instructor, | |
| R. R. College, Alwar. | |

N. B. :—In case the revised rules are approved Shri S. S. Saxena will be the second member of the badge Committee of the Zonal Tournament (First Zone).

- | | |
|--------------------------|-------------------------|
| 2 Shri R. L. Verdia, | Second zone at |
| P. T. I., M. B. College, | Govt. College, Bhilwara |
| Udaipur. | Or |
| | M. B. College, Udaipur. |

N. B. :—In case the revised rules are approved Shri B. D. Bhargava will be the second member of the badge Committee of the Zonal Tournament (Second zone).

9. Under Rule 1 'g' (i) of the existing Tournament Rules, the Board recommended the following representatives of the Sports Board for membership of the General Committee of the tournaments for boys and girls for the session 1958-59 :—

- (i) Shri R. L. Verdia, P. T. I., M. B. College, Udaipur and Miss P. B. Menon, Principal, Rajasthan Mahila Vidyalaya, Udaipur to be members of the General Committee of the Central Tournament for boys to be held at S. D. Govt. College, Beawar or Commerce College, Jaipur.

- (ii) Shri B. D. Bhargava, Principal Commerce College, Jaipur and Shri S. N. Bhaya, P. T. I., R. R. College,

Alwar to be members of the General Committee of the tournament for Girls to be held at the Rajasthan Mahila Vidyalaya, Udaipur.

10. The Board postponed consideration of the reports of performances of the teams deputed by the University to participate in the Inter-University tournaments 1957, for the next meeting of the Board to be held in July 1958.

11. The Board considered the question of deputation of our University teams to Inner-University tournaments in the year 1958-59 and *resolved to recommend that :—*

(i) University teams be deputed to participate in the Inter-University Tournaments for the year 1958-59 in the following events :—

- a) Hockey.
- b) Cricket.
- c) Volley-ball.
- d) Basket Ball
- e) Athletics.

(ii) That for proper conduct of tournaments and encouragement of the games and sports in the University, it was unanimously recommended that :—

(a) the existing grant Rs. 2000/- for sending teams to participate in the Inter-University tournaments be raised to Rs. 4000/-.

(b) the existing grant Rs. 2000/- meant for the University girls tournament be henceforth raised to Rs. 2500/-.

(c) the existing grant Rs. 7000/- meant for the University tournaments (for boys) be raised to Rs. 10,000/-.

(d) hereafter the full cost of the colours and stars awarded by the University at the time of the boys and girls tournaments should be borne by the University.

- (e) henceforth University grant (i) to a college holding the zonal tournament be paid @ Rs. 150/- per participating college upto a maximum of Rs. 2000/- instead of Rs. 100/- per participating college upto a maximum of Rs. 1500/-, as at present and (ii) Central Tournament Rs. 1500/- instead of Rs. 1250/- as at present.

12. The Board authorised the Convener (Shri B. D. Bhargava) to consider the accounts of the University Central Tournament for the year 1957 held at M. S. J. College, Bharatpur and to make suitable recommendation on the matter directly to the Syndicate.

B. D. Bhargava

Convener.

Appendix

(Ref. Board of Sports Res. No. 2 (i) of May 5/6, 1958)

University of Rajasthan Tournament Rules

(FOR BOYS)

INTRODUCTION

In 1929, Mr. A. P. Cox, Director of Education, Jodhpur State, conceived the idea of starting an annual Inter-College Tournament for Rajasthan in order to foster friendly intercourse and healthy rivalry in games, sports and debates among the students of the colleges of Rajasthan States. The Principals of colleges at Ajmer, Bikaner, Jaipur and Udaipur agreed to his proposal. Generous donations for cups were graciously given by the Maharajas of Jodhpur, Bikaner, Jaipur and Udaipur. The tournament was first held at Jodhpur in 1929 and since then it has been held by rotation at different centres of the participating colleges. Birla College, Pilani, joined in 1931 and Raj Rishi College, Alwar, in 1932. The Herbert College, Kota, joined in 1937 and the Mayo College, Ajmer in 1941.

The tournament is now an event of great importance and is looked forward too anxiously by the colleges and has contributed considerably to widen the outlook of the students. It has done a good deal to encourage the spirit of sportsmanship among the students and it is hoped it will long continue to remain a useful and successful feature of the college life of the area now known as the State of Rajasthan.

The tournament was taken over by the University of Rajasthan from 1948.

RULES (General)

Rule 1.

The tournament will be open to teams from the colleges affiliated to the University of Rajasthan and the various Teaching Departments of the University.

- (a) The students reading in Inter. class, in Degree and Post Graduate colleges are eligible to participate in the Tournament.
- (b) Students can represent their colleges and University departments for the number of years as stated below, no matter which college he represents.

RULES FOR ELIGIBILITY

- I. No person shall represent a College or a University Deptt. unless:—
 - (i) he is a bonafide student of the University or of a college affiliated to the University.
 - (ii) *his name appears on the books of the University or of a college affiliated to the University; and*
 - (ii) he is for the time being following a course in the University or the college leading to a degree of the University.

N. B:—This will not apply to the students of Inter. classes studying in Degree and Post-graduate colleges.
- II. No student shall be eligible to represent his institution if more than eight years have elapsed since he passed the Matriculation Examination or other Entrance Examination which qualified him for admission to a course for a first degree of the University. This restriction does not apply to bonafide pupil teachers of affiliated colleges.
- III. Where the University has an Intermediate course followed by a Degree course, a students following a Degree course shall not be eligible to represent the institution if:—
 - (i) the degree course is of two years' duration and more than three years have elapsed since he first began following that course; or
 - (ii) the degree course is of three years' duration and more than four years have elapsed since he first began following that course; or
 - (iii) the Degree course is of more than three years' duration and one year more than the length of the prescribed course has elapsed since he first began following that course.
- IV. A student shall not compete on behalf of more than one college in any one tournament in any one year.
- V. Where any question arises as to whether any student satisfies any of the provisions of this rule, the certificate of the Head of the Department of the University or that of the Principal of affiliated college as the case may be, shall be final and conclusive as to the matter stated in such certificate.
- VI. (a) The Principal of each college is personally responsible for seeing that no ineligible student competes and should certify

when detailed entries are sent that all the competitors named therein are bonafide students according to the rules. An ineligible competitor shall disqualify the team of which he is a member.

*Note:—*A bonafide student is one who satisfies the following conditions:—

- i) He has taken his admission in an affiliated college before the 15th of September and is on the roll till the expiry of the Zonal or Central Tournament as the case may be
- ii) He has paid his tuition fees and other dues from the beginning of the 'session.

(b) The tournament will be run on zonal system. The following shall be the zones for the tournaments:—

1st zone—Comprising Ajmer, and Kota divisions.

2nd zone—Comprising Bikaner, Jodhpur & Udaipur divisions.

*N. B. :—*The athletics will be held only at the place of Central tournaments and not at the zones.

(c) Only two winning teams of the 2 zones will compete at the Central Tournament.

(d) There shall be a General Committee of the Central Tournament as also a committee of each zonal tournament.

(e) (i) The General Committee of the *Central Tournament* shall consist of the following:—

President:—

The General Referee of the Tournament, who shall be the Principal of the College holding the tournament.

Members :—

One teacher nominated by the Principal from each college, participating in the Central Tournament and accompanying the team. Two representatives of the Sports Board.

The president will have a vote and a casting vote. The Secretary of the Committee will be nominated by the Principal of the college holding the tournament.

*N. B. :—*Each college should send two members of the staff with their teams one of whom should preferably be the P. T. I. These persons would

mainly be responsible for the behaviour and discipline of their teams and they should travel on both journeys with the teams and be generally with the teams. Such members and the Sports Board representatives should be treated on duty and the University should prevail upon the management of colleges to enforce this in the interest of discipline.

- (ii) The functions of the General Committee of the Central Tournament will be
 - (a) to run the tournament according to rules.
 - (b) to recommend to the Sports Board any additions and amendments to the rules of the tournament after taking into due consideration the recommendations & suggestions of the various zonal committees.
- (iii) The General Committee of the Zonal or the Central Tournament shall have the power to disqualify any student or a team for misconduct and may recommend to the Sports Board to disqualify a college.
- (iv) That a committee consisting of one teacher from each college under the presidentship of the Principal of the college where the Tournament is held shall be formed to judge the conduct and behaviour of the participating teams and report to the Tournament Committee against offenders for suitable action.
- (v) The colours of the colleges are given *vide Appendix 'A'*. Any modification in the list will be made by the Sports Board.
- (f) (i) The Committee of a zonal tournament will consist of the following :—
 - (a) President :—

The General Referee of the Tournament who shall be the Principal of the College holding the tournament.
 - (b) Representatives of the Sports Board.
 - (c) Members :—

One teacher, and one athletic representative who should be a participating player, both nominated by the Principal, from each participating college,

All the members of the Committee will participate in the discussions and deliberations but the teachers and the representative of the Sports Board alone will have powers to vote. The President will have a vote and a casting vote- The Secretary of the Committee will be nominated by the Principal of the College holding the tournament.

N. B.:—As mentioned under Rule VI (e) above.

(ii) The functions for the Committee of a zonal tournament will be:—

- (a) to run the zonal tournament according to the rules.
- (b) to recommend and suggest to the General Committee of the Central Tournament additions and amendments to the rules of the zonal or central tournament.

2. The Tournament will be held annually at various centres by rotation. Every competing college is expected to take its turn, in due course, as decided by the Sports Board.

Zonal Tournaments will also be run by rotation among the participating colleges. The centres of the zonal tournaments in different years will be decided by the Sports Board on the recommendation of the Zonal Committees.

3. The management of the tournament is to be under the control of the Principal of the Colleges of the centre where the tournament is held. A Secretary, will be appointed by him, and intimated to the participating colleges. The general referee's decision in all events of the tournament will be final. The local committee will be appointed by the Principal to deal with all details to arrange for grounds, umpires, referees, etc.

4. For all games, rules compiled by the staff of the Y. M. C. A. College of Physical Education Saidapat, Madras will be followed, till the rules compiled by the University are ready, unless and otherwise stated.

Protests in writing if any must reach the office of the Secretary of the Tournament along with a fee of Rs. 25/- within two hours of the conclusion of the game. The fee will be refunded if the protest is upheld.

- (a) No protests regarding the nature of the grounds, material and equipment be entertained after the match is over. All com-

plaints of this nature should be made to the Secretary before the formal commencement of the tournament.

- (b) It shall be the duty of the teachers incharge to see beforehand and all such things and the Secretary will provide all facilities to see the nature of the grounds, material and equipments for inspection.

N. B :— The names of Colleges of each zone are given in *Appendix B*, which is subject to revision every year by the Sports Board.

Financial

I. Every competing college will pay Rs. 30/- as entrance fee to the Secretary of the General Committee of the Central Tournament. Out of this a sum of Rs. 200/- will be specially earmarked for miniature cups and badges, stars etc. and any unspent balance will be remitted to the University and form a fund to be utilised by the Sports Board for this and similar purposes.

II. For the promotion and encouragement of games & sports activities, the University shall provide a recurring grant (for the present Rs. 10,000/-) annually to be allotted in the following manner :—

- i) Zonal tournament—Rs. 4,000/-.

This will be paid to the Committee holding the zonal tournament at the rate of Rs. 150/- per competing college upto a maximum of Rs. 2000/- to each zone.

- ii) Central tournament—Rs. 1500/-.

- iii) The balance (out of Rs. 10,000/-) will be spent for Inter-University Tournaments.

The grant given by the University is to be utilised only for the following purposes by the Zonal and the Central Tournament Committees :—

- (a) Accommodation—water, light, earthen pots, miscellaneous hire charges and sanitation.
- (b) Transport—Conveyance to teams from Railway Station to Camp and back, sight seeing, including the other charges on tonga, rickshaw, cycle hire, thela etc.
- (c) Labour—Wages of extra labour employed. However, it should not include any expenditure on new construction of fields and courts.

(d) Refreshment—The players and officials shall be provided refreshment at the following scales for the different matches @ Rs. 0. 25 per person, inclusive of chewing gum, oranges, lemon drops etc.

1. Football match	35 persons including officials.	
2. Basketball	33	—do—
3. Volleyball	26	—do—
4. Hockey Match	36	—do—
5. Tennis (Complete Match)	35	—do—
6. Badminton	28	—do—
7. K-baddi	28	—do—
8. Table Tennis	6	o—
9. Cricket	35	—do—
10. Sports	No. of athletes taking part plus officials 30 each day.	

The volunteers and N. C. C. cadets on duty may be paid refreshment @ 25 nP. per head.

*N. B. :—*The number of players, athletes, volunteers and cadets etc on duty shall be certified by the Secretary and this certificate shall be sent to the University while claiming refreshment charges.

(e) Printing stationery, postage and cyclostyling charges.

(f) Microphones, lining of fields, track and courts and seating arrangements.

The University will not pay in any case the excess expenditure incurred by Tournament Committee over and above the sum provided under Rule 5 I (i) & (ii). The rest of the expenditure will be met by the Tournament Committee from their own funds (i.e. from the non-University Fund).

III. T.A. and D.A. to Teams.

The winners of the Zonal Tournament will be paid Travelling Allowance and Daily Allowance at the following rates by the University if they proceed to participate in the Central Tournaments :—

(a) III class concession railway fare both ways.

(b) Rs. 3/- as D.A. for the day/days on which a player is to take part.

N. B. :—(1) No player shall be counted twice for payment of T.A. and D.A.

- (2) All the T.A. Bills should be verified by the Secretary, Central Tournament.

IV. The players who are selected for University teams for Inter-University Tournaments will be paid Rs. 3/- D.A. for the days he stays for selection and the T.A. at the following rates :—

- (a) III Class railway fare (concession rate) for both way journey.
- (b) Amount incurred on conveyance and coolie etc.

N. B. :—(1) The players in trial match will be supplied with refreshment at the rate of Rs. 0.37 per head per match.

- (2) A sum not exceeding Rs. 25/- will be allowed as incidental charges for each selection. The in-charge of the selection shall have to send a detailed statement of account together with vouchers to the University.

V. Travelling and Daily Allowance to players who are called for coaching after selection before they actually start for Inter-University Tournament.

- (a) Railway fare, tonga and coolie charges as permissible under rule as in Rule VI.
- (b) Daily allowance Rs. 4/- per day per player for the actual days of coaching.
- (c) Refreshment @ Rs. 0.50 per head per match.

VI. T.A. and D.A. to the University Teams going to participate in the Inter-University Tournament :—

- (a) III class railway fare (concession rate) both ways.
- (b) Coolie charges not exceeding Rs. 0.37 for the starting and departing stations and for every change.
- (c) First aid material costing not more than Rs. 10/- per team or teams.
- (d) Refreshment, including chewing gum, oranges, lemon drops etc. will be supplied to the players not exceeding Rs 0.50 per player per match.
- (e) A sum not exceeding Rs. 15/- will be paid to the Manager for contingent charges.
- (f) Daily allowance at the rate of Rs. 4/- per head per day or actual charges paid in the common mess arranged by the Organisers of the Tournament.

- (g) Tonga charges @ Rs. -/8/- per trip to each player. If the distance of the field is more than 1 mile from the camp, the actual conveyance charges shall be paid provided the distance is certified by the Organising Secretary and proper vouchers are produced in support of the claim.
- (h) Any other charges or fees charged by the Organisers of the Tournaments will be allowed on production of proper receipts from them.
- (i) The actual cost of Tennis, Hockey and Cricket balls, shuttle cocks, football, basketball, Volley ball and other playing articles which are required at the venue of Inter-University Tournament according to the rules, will be paid by the University on production of proper vouchers.
- (j) Players kit, sport-shorts, vests, shirts for games team, socks etc. all of University colour will be provided to the teams on payment of half price by the University.
Articles like anklets, knee caps, abdominal guards, sticks, leg-guards, goal-keepers gloves, leather-boots, woolen jerseys etc. will be arranged by the selected player from his college.

N. B.:—1. The Manager will produce proper vouchers in support of all the expenditure to be incurred under Rule VI (f) & (h).

- 2. The players kit if returned on account of non-payment of half the cost and used and unused materials, balls, flags shall be the property of the University and must be delivered to the University within one month from the date of the last match of the tournament.

- VII (a) Secretaries of the Zonal and Central Tournament shall maintain the accounts of the tournament which will be audited by the Principal of the College or his nominee holding the tournament. The statement of the accounts of the tournament duly audited and duly certified by the Principal will be sent to the Registrar, University of Rajasthan, Jaipur by the 31st January otherwise the University Grant will lapse. The above mentioned accounts will be kept in a pucca numbered bound register and these registers along-with files be sent in original along with the statement of accounts etc. to the University.
- (b) The Secretaries of the tournament shall draw up a report of the year's tournament and send it duly signed by the President

along with the balance of stock etc. with Stock Register to the Registrar either within 2 months of the completion of the tournament or by the 31st January which ever is earlier. The report should be signed and sent by the President (Principal).

- (c) The Secretaries of the zonal tournament must send the results (along with the minutes of the Tournament Committee meetings held during the tournament) to the Secretary of the Central Tournament immediately the tournament is over.

VIII. Colleges winning challenge trophies must have their names and dates engraved on the trophies at their own expenses before returning them to the Secretary of the Central Tournament for the year and they will see that the Trophies are returned after necessary polish and repairs at their own expenses.

IX. The college which is the centre will arrange for the accommodation and simple refreshments for the competing teams at the matches and provide whatever facilities it can for sight-seeing, etc. competing colleges will be responsible for getting their teams to and from the play-grounds.

X. Expenses incurred in running the tournament over and above the University allotment are to be borne by the college holding the Tournament. Competing colleges shall bear the travelling expenses, boarding charges and other incidental expenses incurred, during the zonal tournaments but the sports Board will give financial help to games teams participating in the Central Tournaments as provided in Rule III.

Challenge Cups.

6. The following challenge cups will be competed for :-

(a) General Championship-Alwar Cup

The winner of each of the following 10 activities-Badminton, Table Tennis, Kabbadi & Cricket, Football, Hockey, Tennis, Volleyball, Basketball, and Athletic will score 5 points and the runners up 2 points. The college gaining the highest aggregate of marks holds the cup for one year and has its name engraved thereon for that year.

(b) Games Championship-Bapat Memorial Cup

The winner of each of the following 9 activities-Football, Hockey, Cricket, Badminton, Table Tennis, Kabaddi, Tennis, Volleyball and Basketball, will score 5 points each and the runners-up 2 points. The college gaining the highest aggregate

gate-marks holds the cup for one year and has its name engraved thereon for that year.

- | | |
|---------------------------------|-------------------------------|
| (c) Football | Jodhpur Cup |
| (d) Hockey | Dungarpur Cup |
| (e) Tennis | Bikaner Cup |
| (f) Volley Ball | Pilani Shield |
| (g) Athletic | Jaipur Cup |
| (h) Basketball | Bharatpur Cup |
| (i) Football (Runner up) | Asel Singh M. Cup |
| (j) All round sportsman | Cox Cup |
| (k) Basket Ball
(Runners up) | Government College, Ajmer Cup |
| (l) Badminton. | Maharani Gayatri Devi Cup |
| (m) Cricket | |
| (n) Kabaddi | |
| (o) Table Tennis | |

"When a college wins any of these challenge cups for three years in succession, a miniature cup of the value of Rs. 100/- will be presented to it at the following tournament."

Certificates

6. A. Certificates of merit signed by the President and the Secretary of a Central Tournament Committee be awarded to the individual member of the winning and runners-up teams in games and to the individuals scoring I & II places in the Athletics at the Central Tournaments only. For this purpose a team shall be deemed to consist of such number of players as have played in the final match.

Miscellaneous.

7. The Zonal Tournaments should be over by the 7th November and the Central Tournament by the 7th December. If the Tournament go behind the dates prescribed by necessary permission be obtained by the Vice-Chancellor mentioning the specific reasons.

The Secretaries must notify all competing colleges, not later than the 15th of August each year, the exact dates of the tournament.

8. Secretaries of the tournaments will inform all the participating colleges before 2 months about the nature of the grounds and courts and the brands of the balls that would be used. The make of the balls used

for the tournament matches may be any, but their size and weight must conform to the regulations.

9. A definite notice as to its intention of taking part in the coming tournament must be made by every college to secretaries within one month of the receipt of the notice from the Secretary of a Tournament. The secretaries will then arrange for draws for each competition, and announce any relevant details, such as, the latest date for detailed entries, in prescribed forms and communicate them to the competing colleges ten days before the commencement of the tournament.—

(1) The names of the players participating in Rajasthan University Zonal or Central Tournament can be given by the Incharge to the Secretary of the tournaments before the commencement of the tournament, but the actual number of the total players and the items in which participating should be intimated 21 days before.

(2) Each college shall submit a list of players as under:—

Hockey 14

Football 14

Cricket 14

Basketball 12

Volley Ball 9

Kabaddi 10

Tennis not less than 2 & more than 4.

Badminton -do-

Each college will supply the detailed information to the Secretary of the Tournament and to the University concerning the players included as a member of the teams, in the following tabular form—

Name	Enrolment No. & year of passing the Matriculation Exam.	Name & Year of last Exam. passed.	Class in which reading at present	No. of times already participated in University Tournament.	Recommendation for award of star/badge certificate	Place where played.
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10. The competitors of outstanding merit will be awarded in Zonal Tournament badges and appreciation certificates by the Badge Committee of the Zonal Tournament of the year. The badges will be worn over the blazers prescribed by the University.

11. If a college wishes to withdraw from a Tournament it shall notify the Secretary at least a week before the commencement of the tournament. A college which breaks the rule shall be responsible for paying half expenses of any other college team which may be affected by the formers failure to observe the rule.

12. The names of two outstanding players in Hockey and Football, Basketball, Cricket, Athletics and one in Volleyball, Kabaddi, Tennis should be sent by each participating college to the Secretary before the commencement of the tournament. The award of badges and appreciation certificates in each zone will be decided each year by a Badge Committee consisting of the General Referee and two representatives of Sports Board (One Technical & one non-technical).

This Committee of 3 will have power to co-opt any snitable person from the locality not connected with the staff of the college.

- (a) Not more than two badges in Hockey, Football, Cricket, Kabaddi, Table Tennis, Sports and not more than one in Tennis, Basketball, Badminton and Volleyball shall be awarded each year at each of the Zonal Tournament. One star in each game may be given to a badge holder who is adjudged to deserve the award at the Central tournament only.

Name of the game shall be entered in the badge & star.

- (b) Not more than three appreciation certificates in Cricket, Hockey, Football,.....and Athletics and not more than two appreciation certificates in Tennis, Volleyball and Table Tennis, Basketball, Badminton and Kabaddi shall be awarded each year.

A register of the names of competitors of outstanding merit in the Zonal as well as Central tournaments shall be kept, and each time a rule book is printed, names of these competitors should also be printed therein.

Cox Cup

The following shall be the rules at the Central tournaments for the award of the Cox Cup :—

1. Any athlete scoring highest points in the Athletic (Sports) events be awarded the Cox Cup provided he scores at least 15 points.
2. The running trophy shall be deposited with the college to which the winner of the cup belongs. The name of the winner

the college he represents. and the year, shall be engraved on the Cup by that college.

3. A miniature cup and a certificate of merit shall be given away to the winner.

Cox Gold Medal

The Gold medal for the best athletic (Sportsman) of the year, be now awarded to one of the athlete who creates largest number of new records with the minimum of two new records of the University of Rajasthan.

Appendix 'A'

The colours of the colleges :

Maharaja's College, Jaipur.	- Navy Blue and Brilliant Orange.
Birla College of Science & Commerce Pilani.	- Navy Blue & Orange.
Birla Engineering College, Pilani.	- Green & Orange.
Birla Arts College, Pilani.	- Maroon & White.
S. K. N. R. College, Jhoner.	- Red with stars flag and Rosy light shirts.
Seth G. B. Podar College, Nawalgarh.	- Cream & light blue.
Moti Lal College, Jhunjhunu.	- Green white, orange stripped jerseys.
S. S. G. Pareek College, Jaipur.	- Red & Blue.
Sawai Mansingh Medical College, Jaipur.	- Black & Golden Yellow.
Jaswant College, Jodhpur.	- Pale Blue & Dark Blue.
S. M. K. College, Jodhpur.	- Red & Yellow.
M. S. J. College, Bharatpur.	- Red & Green.
Raj Rishi College, Alwar.	- Dark Blue & Yellow.
Law College, Jaipur.	- Light Red & Cream.
Dungar College, Bikaner.	- White & Light Blue.
Lohia College, Churu.	- Rosy & Light Blue.
Teachers Training College, Bikaner.	- Orange & Dark Blue.
R. J. S. R. Jain College, Bikaner.	- Light Blue & Pink.
Govt. College, Sri Ganganagar.	- Red & White.
Herbert College, Kota.	- White & Orange.
Maharana Bhupal College, Udaipur.	- Green & White.
V. B. G. R. S. Teachers Training College, Udaipur.	- White jerseys with Green & white stripes round the neck and the sleeves.
Agrawal College, Jaipur.	- White & Light Blue.

Appendix 'B'

1. Zone comprising Ajmer & Kota Division (Excluding Girls Colleges).

1. Dayanand College, Ajmer.
2. Government College, Ajmer.
3. Govt. T. T. College, Ajmer.
4. S. D. Govt. College, Beawar.
5. Raj Rishi College, Alwar.
6. M. S. J. College, Bharatpur.
7. Agrawal College Jaipur.
8. Maharaja's College, Jaipur.
9. Commerce College, Jaipur.
10. Rajasthan College, Jaipur.
11. S. M. S. Medical College, Jaipur.
12. S. S. G. Pareek College, Jaipur.
13. University Department of History, Jaipur.
14. University Department of Economics, & Pub. Admn., Jaipur.
15. University Law College, Jaipur.
16. S. K. N. Agricultural Institute, Jobner.
17. Government College, Kota.
18. Seth G. B. Podar College, Nawalgarh.
19. Birla College of Arts, Pilani.
20. Birla College of Science & Commerce, Pilani.
21. Birla Engineering College, Pilani.
22. Shri Kalyan College, Sikar.
23. Chirawa College, Chirawa.
24. Seth Motilal College, Jhunjhunu.
25. S. R. College, Jhalawar.

2. Zone comprising Bikaner, Jodhpur and Udaipur Divisions (Excluding Girls Colleges).

1. Maharana College, Bhilwara.
2. B. J. S. R. Jain College, Bikaner.
3. Dungar College, Bikaner.
4. Raj. College of Vt. Sc. & A. H., Bikaner.
5. Shri Jain College, Bikaner.

6. Govt. T. T. College, Bikaner.
 7. Lohia College, Churu.
 8. Jaswant College, Jodhpur.
 9. University Department of Philosophy, Jodhpur.
 10. S. M. K. College, Jodhpur.
 11. M. B. M. Engineering College, Jodhpur.
 12. Basic T. T. College, Gandhi Vidya Mandir, Sardarshahr.
 13. Government College, Sirohi.
 14. Government College, Shri Ganganagar.
 15. M. B. College, Udaipur.
 16. University Department of Geology, Udaipur.
 17. Rajasthan College of Agriculture, Udaipur.
 18. Vidya Bhawan G. R. S. T. T. College, Udaipur.
 19. Rajasthan Vishva Vidyapeeth, Udaipur.
 20. S. P. U. College, Falna.
 21. Bangur College, Didwana.
 22. Govt. College, Banswara.
3. Girls Colleges.
1. Savitri Girls College, Ajmer.
 2. Banasthali Vidya Peeth, Banasthali (Jaipur).
 3. M. S. College for Women, Bikaner.
 4. Maharani's College, Jaipur.
 5. Rajmahal Girls College, Jodhpur.
 6. Rajasthan Mahila Vidyalaya, Udaipur.
 7. Maharani's Girl's College, Kota.

· APPENDIX II

(Ref. Syndicate Res. No. 2 of October 11, 1958.)

Minutes of the meeting of the Board of Sports held in the University Office on the 7th August 1958 at 3.00 p. m.

Present :

1. Dr. (Miss) R. P. Shastri.
2. Miss P. B. Menon
3. Shri S. N. Bhaya
4. Shri R. L. Verdia
5. Shri B. D. Bhargava (*Convener*)

1. The minutes of the meeting of the Board of Sports held on the 5th May 1958 were confirmed with the modification that in the light of the decisions of the Inter-University Sports Board meeting held at Jaipur on 21st July 1958 para (1) of Res. 11 should be amended as follows:—

(i) University teams be deputed to participate in the Inter-University Tournaments for the year 1958-59 in the following events :

- (a) Volley-ball
- (b) Athletics (Boys and girls)
- (c) Cricket
- (d) Basket-ball
- (e) Badminton (Boys and girls)
- (f) Hockey.

2. The Board considered the reports of the University Tournaments for the year 1957 and *resolved that* the reports be recorded.

3. The Board postponed consideration of the proposal for organising debates in English and Hindi at the time of the University Central Tournament (as referred to it by the Board of Sports Res. No. 7 Dated the 5th May 1958) .

4. The Board considered the report of performances of the sports team deputed by the University to the Inter-University Athletic Meet 1957 held at Poona and *resolved* that the report be recorded. It *further resolved* that in future the Managers of the teams be asked to send their reports of performances of the teams and detailed accounts of expenditure duly supported by vouchers for adjustment of the advances within a fortnight from the date of their return to their college head-quarters.

5. The Board considered the reports of the Inspectors 'Shri S. S. Saxena and Shri S. N. Bhaya) appointed vide its Res. No. 5 (ii) dated the 5th May 1958 to inspect the following colleges for the venue for Zonal (second zone) and Central Tournament 1958:-

- | | |
|----------------------------------|----------------------|
| (1) S. D. Government College, | |
| Beawar. | (Central Tournament) |
| (2) Government College, Bhilwara | Zonal Tournament |
| | (Second Zone) |

Resolved that—

(i) Government College, Bhilwara be finally approved to be the venue for the zonal tournament (Second zone) 1958.

(ii) The S. D. Government College, Beawar may be asked to remove the deficiencies pointed out by the University Inspectors in their report by October 1958 and the committee consisting of the following may again inspect the college for the purpose and send their report by the 20th October 1958 and if by that time the college is not found suitable for the venue the Central Tournament for the year 1958-59 may be held at the Commerce College, Jaipur :

- (1) Principal B. D. Bhargava, Commerce College, Jaipur. (*Convener*)
- (2) Shri R. L. Verdia, Physical Training Instructor, M. B. College, Udaipur.

6. The Board considered a letter No. GM-1/73093 dated the 8th May 1958 from the General Manager, the Atlas Cycle Industries, Sonapat (Panjab) stating that in view of the fact that bicycle racing is very popular game in advance countries, the Atlas Industries propose to keep a moving Trophy to be presented to the Winner of a Bicycle race during the next Annual Athletic Meet to be conducted under the auspices of this University and *resolved that :*

- (i) Shri R. L. Verdia and Shri S. N. Bhaya may examine the case and give their views regarding possibility of holding cycle race at the time of the University Central Tournament and their report may be communicated to the Convener, Sports Board who may directly place the matter before the Syndicate.
- (ii) On the suggestion of Miss P. B. Menon, Principal, Rajasthan Mahila Vidyalaya, Udaipur the Board was of the opinion that if it is decided to accept the offer it would be on the condition that the Manager, Atlas Cycle Industries agrees to donate one cycle every year for award as 1st prize to the winner of the race. Other prizes will be donated by the University.

7. As the Committee appointed vide Sports Board Res No. 7 dated 5th May 1958 to compile the rules for Matches to be played in different games at the University Tournaments could not meet so far the Board *resolved that* the following members of the Committee who were present in Jaipur, may have a meeting of the Committee on the 8th August 1958 at 2 p. m. and frame rules for the matches so that they may be followed for Tournaments of 1958. (In the absence of Shri Saxena, Dr. (Miss) R. P. Shastri's name was added) :

- (1) Shri R. L. Verdia
- (2) Shri S. N. Bhaya
- (3) Dr. (Miss) R. P. Shastri
- (4) Miss P. B. Menon

Rules for games & sports drafted by the Committee are given in *Appendix 'A'*

8. The Board considered the University Girls Tournament Rules as drafted by Miss P. B. Menon in accordance with the Sports Board Res. No. 2 (iii) dated 5th May 1958 and *resolved that* the revised rules as given in *Appendix 'B'* be adopted.

9. The Convener, Sports Board expressed his difficulty in getting assistance of Shri Lekh Raj Soni in the performance of the duties for which he was appointed vide Syndicate Res. No. 14 (ii) dated the 20th January 1952.

The Board unanimously *resolved that* under the circumstances Shri L. R. Soni be relieved of these duties, and as the Convener, Sports Board would need proper assistance in the performance of his increasing duties, the Convener is authorised to make suitable alternative arrangement for the work with the approval of the Vics-Chancellor.

10. The Board considered the accounts of the University Zonal Tournament (1956) held at M. B. College, Udaipur together with the audit report of the University Accountant thereon and approved the expenditure of Rs. 1,182.32 nP. for the purpose as incurred and already paid by the University.

11. The Board considered letter No. 2615 dated the 24/25th July, 1958 from the Principal, M. B. College, Udaipur, addressed to the Convener, Sports Board regarding award of colours, appreciation certificates and a star for the cricket tournament (second zone) 1958 and *resolved that* colours and appreciation certificates may be awarded. For the award of the Star score-sheets of both the zones may first be scrutinised by the Convener, Sports Board in consultation with Shri S. N. Bhaya and Shri R. L. Verdia (Members of the Sports Board)

B. D. Bhargava
Convener.

Appendix 'A'

(*Ref. Board of Sports Res. No. 7 of August 7 1958*).

Special rules for the conduct of Games and Sports.

A. Athletics.

1. The competition shall be conducted under International Athletic Federation Rules adopted by the Amateur Athletic Federation of India.

2. Each College may send not more than two competitors for each athletic event, and four for relay races. One additional competitor may be entered as a reserve for each events; and in the case of relay races two may be entered as reserves.

3. A. Events (for man)

Relay Races	4X100 metre and 4X400 metres.
Races	100, 200, 400, 800, 1500, 5000 metres.
Hurdles	110 metres High Hurdles and 400 metres Hurdles.
Jumps	Running Board Jump, Running High Jump, Hop step & Jump & Pole Vault.
Throws	Shot put, Hammer throw, Discus throw, Javelin throw.

3. B. Events (for Girls)

Relay Races	4X100 metres
Races	100, 200 metres.
Hurdles	Height 2'6", Low hurdles 80 Metres.
Jumps	Running Board Jump, Running High Jump
Throws	Shot put (8 lbs 30 ozs) Discus Throw, Javelin Throw.

4. The order of athletic events shall be fixed and notified in advance to all the participating colleges by the organising colleges.

5. Duration:—The competition may continue on two consecutive afternoons.

6. Points:—Points shall be awarded on the team basis. The winning college shall score for the first place five points on each individual event, the second college three points, and the third college one point. In the Relay Races, however, the winning college shall score 10, the second college 6, and the third college 2 points respectively.

7. **Championship:**—The college scoring the highest number of points at the end of the competition shall be declared the Champion College for the year. In case of a tie for the Championship the college which has the highest number of first place to its credit shall be adjudged the champion.

8. Three extra trial shall be given to the first 4 competitors for a particular field event, if the actual number of competitors participating in that event does not exceed 12; if the number of competitors exceed 12; then the 3 extra trial shall be given to the first 6 competitors.

B. Tennis

1. The tournament shall be played on the Davis Cup lines i. e. each rubber consisting of one Doubles match and four singles (only two players representing each college in singles, but making a total of four matches by playing against each player in turn). Each match shall be played as the best of three sets.

2. The number of players representing a college shall not be less than two or more than four.

C. Badminton

1. The tournament will be played on the same lines as the Tennis tournament, i. e. each rubber consisting of five matches, one doubles & 4 singles (only two players representing each college in singles but making a total of 4 matches by playing against each player of the opposing teams in turn). Each match will be played as the best of three sets.

2. Rules as printed in the latest edition of the book of Games and Sports compiled by Y. M. C. A. Publication, Sadiapat, Madras shall apply.

3. The number of players representing a college shall not be less than two or more than four.

D. Basketball

1. The tournament shall be conducted according to the International rules as adopted by the Indian Basketball Federation each college shall submit a list of players not exceeding 10 who will participate in the tournament.

E. Football

1. All matches shall be played according to the latest rules as adopted by the International Football Association Board. The duration of a match shall be 35 minutes each way with an interval of 5 minutes.

2. Extra time of 10 minutes each way shall be played in case of the drawn matches. If no decision is reached after two replays in any round except the Final, the issue shall be decided by the spin of coin.
3. Each college shall submit a list of players not exceeding fourteen who will participate in the tournament.

F. Hockey

1. Matches shall be played according to the latest rules as adopted by the International Hockey Federation Board.
2. The duration of a match shall be 35 minutes each way with an interval of five minutes. An extra time of 10 minutes each way shall be played in case of drawn games. If no decision is reached after two replays in any round except the Final, the issue shall be decided by the spin of coin.
3. Each college shall submit a list of players not exceeding fourteen who will participate in the tournament.

G. Kabaddi

1. The Kabaddi (Hututu) Tournament will be run in accordance with the latest Rules of Games & Sports of Y. M. C. A. Saidapat, Madras.
2. Each college shall submit a list of players not exceeding 9 who will participate in the tournament.

H. Volley-Ball

1. The latest International Rules of Games & Sports of Y. M. C. A. Saidapat, Madras be followed.
2. A list of 9 players shall be submitted by the college.

I. Cricket

1. Matches shall be played according to the latest Rules of Games and Sports of Y. M. C. A. Saidapat, Madras.
2. All matches shall be played of two days duration except the Final match, which shall be played to finish. If the match is unfinished during the days allotted for it, the result shall be determined on the basis of the 1st inning's score. In the case of the tie the match shall be decided by the spin of the coin. The number of intervals and their timings and duration shall be determined at the commencement of the match. A match shall be played 5 hours a day.
3. Ball approved by the captains of the match shall be used.

4. Each college shall submit a list of players not exceeding 14 to participate in the tournament.

All games will be played on knock out system.

Note :—Rules of Table Tennis for men to be inserted later on.

Cox Cup

The following shall be the rules at the Central Tournament for the award of the Cox Cup :—

1. Any athlete scoring highest points in the Athletic (sports) events be awarded the Cox Cup provided he scores at least 15 points.
2. The running trophy shall remain with the college to which the winner of the cup belongs. The name of the winner, the college he represents, and the year, shall be engraved on the Cup by that college.
3. A miniature cup worth rupees ten and a certificate of merit shall be given away to the winner.

Cox Gold Medal

The Gold medal for the best athlete (Sportsman) of the year, be now awarded to one of the athletes who creates largest number of new records with the minimum of two new records of the University of Rajasthan.

B. D. Bhargava.

RULES FOR GAMES & SPORTS (GIRLS)

Soft Ball

The rules of the latest edition of the book of rules of Games and Sports—of Y. M. C. A. Publication, Saidapat, Madras will be followed.

Participating colleges may send a list of players not exceeding 12 players participating in the tournament. In case of a tie two more complete innings will be played again, if the tie arises again the final decision will be by the spin of a coin, except, in final match which will be played till finish.

Tennikoit

Game will consists of two singles and one doubles. The players of single may form double pairs also, but for the two single matches the players must be separate. Best of three sets will be played.

Net Ball

Rules of the latest edition of the book of Rules of Games and Sports by Y. M. C. A. Saidapat, Madras will be followed. A list not exceeding 9 players should be sent by the participating colleges.

Duration of game will be of 15 minutes each way with 5 minutes interval in between. In case of drawn matches extra time of 5 minutes each way, will be given, if it again ends in a tie, after one replay the decision will be by the spin of a coin, except in the finals, where it will be played till finish.

Throw Ball

Rules of the latest edition of the book of Rules of Games & Sports by Y. M. C. A. Saidapat, Madras will be followed. A list not exceeding 11 players should be submitted by the participating colleges. Best of three sets will be played.

Kho-Kho

Rules of the latest edition of the book rules at of Games and Sports by Y. M. C. A. Saidapat, Madras will be followed. A list not exceeding 11 players should be submitted by the participating colleges.

B. D. Bhargava

Appendix 'B'

(*Res. Board of Sports Res. No. 8 of August 7, 1958*)

The University of Rajasthan Tournaments for Women

RULES

Introduction:

In 1951, Miss Menon, Principal, Rajasthan Mahila Vidyalaya, Udaipur conceived the idea of starting tournaments for the women students of the colleges. Bikaner, Kotah and Udaipur agreed to the proposal and participated in the first tournaments. In 1952, on the suggestions of Miss Menon, this tournament was taken over by the University of Rajputana and named as the University of Rajputana Women's Tournaments. Then, one by one the other colleges also began to join it. Most of the running Trophies are presented by the Rajasthan Mahila Vidyalaya.

The tournament now is an event of great importance and is looked forward to anxiously by the colleges and was contributed considerably to widen the outlook of the students. It has done a good deal to encourage the spirit of sportsmanship among the students and it is hoped it will long continue to remain a useful and successful feature of the college life of Rajasthan.

RULES

- I. The tournament will be known as the University of Rajasthan Tournament for women.
- II. The tournament will be open to teams from the colleges affiliated to the University of Rajasthan and the various teaching departments of the University.
- III. Students of the Intermediate classes of the degree and post-graduate colleges are also eligible to participate in the tournament.

Students can represent their colleges and University departments for the number of years as stated below, no matter which college she represents.

Rules of eligibility:

1. No person shall represent a college or a department of the University unless:

- I. She is a bonafide student of the University or of a college affiliated to the University.
- II. Her name appears on the books of the University or of a college affiliated to the University.
- III. She is for the time being following a course in the University or the college leading to a degree of the University.

N. B. This does not apply to the students of the intermediate classes of a degree or post-graduate college.

2. No student shall be eligible to represent her institution if more than eight years have elapsed since she passed the Matriculation or other Entrance examination which qualified her for admission to the first degree of the University.

N. B.—This does not apply to the pupil teachers of the affiliated Teachers Training Colleges.

3. Where the University has an Intermediate course followed by a degree course, a student following the degree course shall not be eligible to represent the institution, if:

- i. The degree course is of two years duration and more than three years have elapsed since she first began following the course, or
- ii. The course is of three years duration and more than four years have elapsed since she first began following that course, or
- iii. The degree course is of more than three years duration and one year more than the length of the prescribed course has elapsed since she first began following the course.
- iv. A student shall not compete on behalf of more than one college in any one tournament in any one year.
- v. Where any question arises as to whether any student satisfies any of the provisions of the rule, the certificate of the head of the teaching department of the University or that of the principal of the college as the case may be, shall be final and conclusive as to the matter stated in such certificate.
- vi. No student shall be permitted to participate in any one event of the University Tournaments for more than six years.

The principal of each college or the head of the teaching department of the University, as the case may be, is personally responsible for seeing that no ineligible student competes, and should certify, when

detailed entries are made and sent, that all the competitors named there in are bonafide students, according to the rules. An ineligible competitor shall disqualify the team of which she is a member.

N. B. A bonafide student is one who satisfies the following conditions:

- i. She has taken her admission in an affiliated college before the 15th of September and is on the roll till the expiry of the tournaments.
 - ii. She has paid her tuition fees and other dues from the beginning of the session.
4. (i) There shall be a General Committee of the tournaments. The General Committee of the tournaments shall consist of: President: the general referee of the tournament, who shall be the principal of the college holding the tournament.

Members:

One teacher nominated by the principal from each college participating in the tournament and accompanying the team, two representatives of the Sports Board. The President will have a vote and a casting vote. The Secretary of the Committee will be nominated by the principal holding the tournament.

N. B. The principals will see that two members accompany the team and one of them preferably will be the P. T. I.

- (ii) The functions of the general committee of the tournament will be:
 - (a) to run the tournament according to rules.
 - (b) to recommend to the Sports Board any additions and amendments, recommendations and suggestions made by the committee.
- (iii) The general committee of the tournament shall have the power to disqualify any student or a team for misconduct, and may recommend to the Sports Board to disqualify a college.
- (iv) That a committee consisting of one teacher from each college under the presidentship of the principal of the college where the tournament is held, shall be formed to judge the conduct and behaviour of the participating teams and report to the general committee against offenders for suitable action.
- (v) The colours of the colleges are as below and each college shall wear its own colour during matches and athletics.

1. Dungar College, Bikaner — White and light blue.
2. Jaswant College, Jodhpur — Pale blue and dark-blue.
3. Maharaja's College, Jaipur — Navy blue and orange.
4. Maharani's College, Jaipur — Cream and maroon.
5. Rajasthan Mahila
Vidyalaya, Udaipur — Light blue and white.
6. Raj Risbi College, Alwar — Golden yellow & dark blue.
7. S. M. S. Medical College,
Jaipur — Black & golden yellow.
8. M. Sudershan College,
Bikaner — White and bright blue.

(vi) The tournament will be held annually at various centres by rotation. Every competing college is expected to take its turn, in due course, as decided by the Sports Board.

N. B.—Invitations from boys colleges with Coeducation may be entertained only when there has been no Women's college extending an invitation.

(vii) The management of the tournament is to be under the control of the principal of the college where the tournament is held.

A Secretary will be appointed by her and intimated to the participating colleges. The general referee's decision in all the events of the tournament will be final. The local committee will be appointed by the principal to deal with all details to arrange for grounds, umpires referees etc.

(viii) For all games the latest book of rules compiled by the staff of the Y. M. C.A. College of Physical Education, Saidapat, Madras, will be followed till the book of rules compiled by the University is ready.

(ix) Protests in writing, if any, must reach the office of the Secretary of the tournament along with a fees of Rs. 25.00 within two hours of the conclusion of the game. The fee will be refunded if the protest is upheld.

However no protests regarding the nature of the grounds, materials, equipments etc. be entertained after the match is over. All complaints of this nature should be made to the Secretary before the formal commencement of the tournament. It will be the duty of the in-charge accompanying the team to see to these.

Financial :

- (i) Every competing college will pay Rs 30 00 as entrance fee to the Secretary of the General Committee of the Tournament.
- (ii) For the promotion and encouragement of Games and Sports activities, the University shall provide a recurring grant (for the present Rs. 2500.00) annually to be spent on the following items :
- Accommodation, water, light, earthen pots, miscellaneous hire charges and cost of sanitation.
 - Transport-conveyance to the teams from the Railway Station to the camp and back, including other charges on Tonga, Rikshaw, cycle hire, thela etc, sight-seeing if so decided by the host college, etc.
 - T. A. to University teams (both ways actual third class concession fare).
 - Labour for extra labour employed for the tournament. This will not include any expenditure on fields and courts.
 - Printing, stationery postage and cyclostyling charges.
 - Microphones, Lining of fields, tracks and courts and seating arrangements and repairs.
 - Shuttle cocks and soft balls.
 - Daily bulletin during tournament days.
 - Refreshments-players and officials shall be provided refreshments at the following scales for the different matches at Rs. 0.25 per person inclusive of chewing gums oranges, lemondrops etc.

Soft ball	...	25	(including officials).
Net ball	...	20	-do-
Throw ball	...	25	-do-
Kho Kho	...	25	-do-
Badminton	(doubles)	9	-do-
	-do (singles)	6	
Teni-koit	(doubles)	9	
Teni-koit	(singles)	6	
Table tennis	...	6	

Sports ... No. of athletes and 30 officials.

The volunteers and the N. C. C. cadets on duty shall be paid refreshment at 25 nP per head.

N.B.—The number of players, athletes, volunteers and cadets etc. shall be certified by the Secretary and this certificate shall be sent to the University while claiminig refreshment charges.

5. (a) The Secretary of the tournament shall maintain the accounts of the tournament which will be audited by the Principal or her nominee of the college holding the tournament. The statement of accounts duly audited will be sent to the Registrar, University of Rajasthan, Jaipur by 31st January, otherwise the University grant will lapse. The above mentioned accounts will be kept in a pucca numbered bound registers and these registers along with files be sent in original to the University.

(b) The President of the tournament shall draw up a report of the year's tournament and send it with the balance of stock etc. with the stock register to the Registrar within 2 months of the completion of the tournament, or 31st of January which-ever is-earlier.

6. College winning challenge trophies must have their names and dates engraved on the trophies at their own expense before returning them to the Secretary of the tournament for the year, and they will see that the trophies are returned after necessary polish and repairs at their own expenses.

7. The college which is the centre, will arrange for the accommodation and simple refreshments for the competing teams at the matches and provide whatever facilities it can for sight-seeing etc. Competing colleges will be responsible for getting their teams to and from the play grounds.

8. Expenses incurred in running the tournament upon grounds, balls etc. (of a permanent nature) are to be borne by the college holding the tournament. Competing colleges shall bear boarding charges and other incidental expenses incurred during the tournament.

N. B.—Other contingencies are to be met from non-University funds.

Challenge cups.

The following challenge cups will be competed for :

(a) *General Championship :*

The winner of each of the following activities i.e. Throw-ball, Net ball, Soft ball, Badminton, tenni-koit, table tennis, Kho-Kho and atheletics will score 5 points and the runners up, 2 points each. The college gaining the highest aggregate of marks holds the cup for one year.

(b) *Games Championship cup :*

The winner of each of the following games viz. Throw ball, Badminton, Tenni-koit, Table tennis, Net ball, Soft-ball, and Kho Kho will score 5 points each and the runners up 2 points. The college gaining the highest aggregate of points hold the cup for one year and has its name engraved there on for that year.

(c) Base ball	...	...	...	cup.
(d) Throw hall	...	...	...	cup.
(e) Net ball	...	...	...	cup.
(f) Tenni-koit	...	...	...	cup.
(g) Badminton	...	...	...	cup.
(h) Kho Kho	...	...	...	cup.
(i) Table tennis	...	...	...	cup.
(j) Sports	...	...	...	cup.

When a college holds any of these challenge cups for three years in succession, a miniature silver cup of the value of Rs. 100.00 will be presented to it at the following tournament.

9. Certificates of merit signed by the President and the Secretary of the tournament committee be awarded to the individuals of the winning and runners up games and to the individuals scoring I and II places in the athletics at the tournaments. For this purpose a team shall be deemed to consist of such number of players as have played in the final match.

Miscellaneous :

10. The tournaments must be completed by the end of November, between the first and second terms of the University.

If due to unforeseen and unavoidable circumstances, the tournaments can be held only later a permission from the Vice-Chancellor should be obtained.

The Secretary must notify all competing colleges, not later than the last day of August, each year, the exact dates of the tournament.

11. Secretaries will inform all the participating colleges two months before the date of the tournaments, about the nature of the grounds and courts and the brands of the balls that would be used. The make of the balls used for the tournament matches may be any, but their size and weight must conform to the regulations.

12. A definite notice as to its intention of taking part in the coming tournament must be made by every college to the Secretary for the year within one month of the receipt of the intimation. The Secretaries will then arrange for draws for each competition, and announce any relevant details, such as, the latest date for the detailed entries, in prescribed forms and communicate them to the competing colleges ten days before the commencement of the tournament.

Each college will supply the detailed information to the Secretary of the tournament and to the University, concerning the players included as a member of the teams, in the following tabular form :

Name	Enrolment No. & year of passing H S. Exam.	Name & Year of last Exam. passed.	Class reading at present	No. of times participated in tournaments.	Recommendation for award.	Place where played.
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13. The competitors of outstanding merit will be awarded tournament badges and appreciation certificates by the badge committee of the tournament of the year.

The award of the badges and the appreciation certificates will be decided each year by a badge committee.

The badge committee will consist of the general referee and two representatives of the Sports Board (One technical and one non-technical). This committee of 3 will have power to coopt any suitable person from the locality not connected with the staff of the college.

14. If a college wishes to withdraw from a tournament, it shall notify the Secretary at least a week before the commencement of the tournament. A college which breaks the rule shall be responsible for paying half expenses of any other college team which may have affected by the former's failure to observe the rule.

15. The names of two outstanding players in Kho Kho, Throw ball, Net ball, Soft ball and athletics and one in Tenni-koit, Table Tennis and Badminton should be sent by each participating college to the Secretary before the commencement of the tournament. The award will be decided by the badge committee.

- (a) Not more than two badges in Kho Kho, Throw-ball, Net ball, Soft ball and athletics and not more than one in Table tennis, Tenni-koit and Badminton shall be awarded each year at the tournament.

One star in each item may be given to a badge holder. Name of the game and year shall be entered on the badge and the star.

- (b) Not more than three appreciation certificates in Kho Kho, Net ball, Throw ball, Soft ball and Athletics and not more than two appreciation certificates in Tenni-koit, Table Tennis, and Badminton shall be awarded each year.

A register of the names of competitors of outstanding merit i.e. who are awarded badges, star etc. shall be kept, and each time a rule book is printed, names of these competitors should also be printed therein.

P. B. Menon
Convener.

APPENDIX III

(Ref. Syndicate Res. No. 4 of October 11, 1958)

Minutes of a meeting of the Committee appointed by the Syndicate (vide Res. No. 43 dated the 12th August, 1958), to consider the question of setting up a small administrative Unit to collect and supply expeditiously statistical and other information required by the University Grants Commission, held at the University Office, Jaipur, on Monday, the 29th September, 1958 at 3.30 p.m.

Present :

1. Shri M. M. Varma
2. Shri B. D. Bhargava
3. Shri K. L. Varma

(Registrar)

The Committee considered the letters (1) No. F. 89-87/57 (G) dated the 31st December, 1957, and (2) No. 87-50/58 (G) dated the 21st May, 1958 from the Secretary, University Grants Commission, New Delhi, together with the office note (copy enclosed) as approved by the Vice-Chancellor.

Resolved to recommend that a separate section with the following staff be set up:—

- | | |
|--|-----------------------|
| 1. One Superintendent in the grade of | Rs. 250-124-375. |
| 2. One Senior Assistant in the grade of | Rs. 150-10-250. |
| 3. Two Upper Division Clerks in the grade of | Rs. 100-8-180-10-220. |
| 4. One Lower Division clerk in the grade of | Rs. 75-5-150. |
| 5. One class IV servant in the grade of | Rs. 25-1-35. |

The appointments in the section will be for the Second Five Year Plan Period, but while advertising any post for the section it may be mentioned that the posts are likely to be made permanent after the Plan period. Since the condition laid down by the University Grants Commission was that the Commission will share 50% of the actual expenditure only, the matching share of the University be in the shape of staff i.e. by transferring the existing hands performing the duties in connection with the Statistical work and supply of information to the University

Grants Commission, to the new Section Thus the following new staff only be recruited to cover the grant sanctioned by the University Grants Commission:—

- (1) Superintendent.
- (2) One U. D. C.
- (3) One peon.

The new section will not only deal with the supply of Statistical and other information to the University Grants Commission, but also with all the correspondence with the Government of India and Development schemes of the University.

K. L. Varma
Registrar,

Appendix

Subject :— Establishment of a section in the University for purpose of supplying information asked for by the U. G. C.

A statement showing the scheme submitted by us and sanctioned by the U. G. C. is given below :—

Scheme submitted by the University.	Scheme approved and sanctioned by the U. G. C.
Annual expenditure	(For the Plan Period)
1. One Supdt. in the grade— Rs. 250-12½-375 Rs. 3000/-	(1) Posts approved by the U. G. C. subject to the condition that the Commission will meet 50% of the actual expenditure incurred on the salary and allowances of this staff during the 2nd Five Year Plan only, subject to the condition that in no year the grant payable by the Commission will exceed Rs. 6,000/- per annum.
2. One Senior Asstt. (Rs. 150-10-250) Rs. 1800/-	
3. U. D. Cs. (2) (Rs. 100-8-180-10-220) Rs. 2400/-	
4. One L. D. C. (Rs. 75-5-150) Rs. 900/-	
5. Peons (2) (Rs. 25-1-35) Rs. 600/-	
Total ... Rs. 8,700/-	(Ref later No. F. 87-50/58 (G) dated the 21st May 1958 from the Secretary, U. G. C.)
6. Plus 45% on account of D. A., P. F. & House rent to the above staff. Rs. 3,915/-	
Total ... Rs. 12,615/-	
7. Contingencies. Rs. 1,200/-	(2) Contingencies—expenditure on incidental charges (e.g.) stationery and postage etc. not approved.
Grand Total ... Rs. 13,615/-	

Note :— Grant will be paid by the U. G. C. on receipt of statement of actual expenditure duly audited, during the year. The U. G. C. have called for a list of persons appointed, date of appointment and pay allowances.

At present the following 3 hands in the General Section carry out the work of U. G. C., statistics and correspondence with the Government of India.

1. Two U. D. Cs. (Shri H. L. Chaturvedi,
Shri H. C. Goyal).
2. One temporary L. D. C. (Shri G. P. Saxena).

*Note :—*Shri Goyal has resigned and the post will be filled up shortly.

These three posts may be considered as University's 50% contribution and the rest of the staff as sanctioned by the U. G. C. may be appointed.

The University contribution 50% will be as follows—

One Senior Asstt. @ Rs. 160/-p. m. X 12	Rs. 1920/-
One U. D. C. @ Rs. 124/-p. m. X 12	Rs. 1488/-
One L. D. C. @ Rs. 75/-p. m. X 12	Rs. 900/-
45% on account of P. F. Contribution, D. A. and House Rent	Rs. 1938/-
	<hr/> Rs. 6246/-

U. G. C.'s (50%) contribution for the 1st year for new appointments—

1. One Supdt. (250-12½-375) 250 x 12	Rs. 3000/-
2. One U. D. C. (100-8-180-16-220) 100 x 12	Rs. 1200/-
3. Two Peons (25-1-35) Rs. 25 x 12 x 2.	Rs. 600/-
	<hr/> Rs. 4800/-
Add 45%—on account of P. F. contribution, D. A. and House Rent.	Rs. 2160/-
	<hr/> Rs. 6960/-

The U. G. C. does not agree to pay more than Rs. 6000/-. The only additional financial liability to the University therefore is as follows:—

Rs. 12000/-(6246 plus 6960) Rs. 12061 per annum.

In other words the saving to the University will be 6246
— 1206

Rs. 5040 P.A.

in terms of all this additional staff, which is now inevitable for efficient working and running of the unit for U. G. C. work. The Unit will also do all statistical work, correspondence with U. G. C. and correspondence with Govt. of India and State Govt. at present attended to by the General Section. The additional ministerial staff to be recruited should

possess the following qualifications :-

1. Superintendent- i) Having post-graduate degree in Mathematics with Mathematical Statistics as one of his optional papers in M. A. or M. Sc.

or

- ii) Having a post-graduate degree in Statistics.

and iii) Having some experience of practical work in Statistics.

- iv) Has passed in General English at the degree examination.

- v) Has preferably adequate experience of working in an office

2. One U. D. C. -1. At least Graduate (B. Com.) having knowledge of accounts work and good at type-writing.

2. Previous experience of office work.

The new unit be deemed to have been set up from the date the Syndicate has approved of the scheme. The matter may be placed before the Syndicate to be held on 12. 8. 58 after the Vice-Chancellor has approved of it.

In the meantime the post of Superintendent and U. D. C. may be advertised.

APPENDIX IV

(Ref. Syndicate Res. No. 5 of October 11, 1958)

An agreement made this.....day of.....between.....
.....(hereinafter called the supplier/printer which expression shall, where the contexts so admits, be deemed to include his heirs, successors, executors and administrators) of the one part and the Registrar, University of Rajasthan, Jaipur (hereinafter called the University, which expression shall, where the context so admits be deemed to include his successors in office and assigns) of the other part.

2. Whereas the approved supplier/printer has agreed with the University to supply to the Registrar, University of Rajasthan, Jaipur (or to print) all those jobs set forth in the purchase order No.....dated the.....and subsequent order, if any, placed in the manner set forth in the conditions and terms of the contract and at the rates set forth in the said purchase order.

3. And whereas the approved supplier/printer has deposited a sum of Rs.....in.....as security for the due performance of the aforesaid agreement.

4. Now this agreement witnesseth that in consideration of the payment to be made by the University through.....at the rates set forth in purchase order No.....dated.....the approved supplier/printer will duly supply/print the said articles/jobs set forth in purchase order No.....dated.....in the manner set forth in the conditions and terms of the contract.

5. The conditions and terms of contract will be deemed to be taken as part of this agreement and binding on the parties executing this agreement.

6. The University do hereby agree that if the approved supplier/printer shall duly supply/print the said articles/jobs in the manner aforesaid and observe and keep the said terms and conditions, the Registrar will pay to the approved supplier/printer by cheque.

7. The delivery shall be made within the period set forth in the purchase order No.....dated.....

8. In case of non-fulfilment of the contract by the supplier/printer the University shall be at liberty to arrange supply either through re-tender or otherwise. The excess cost incurred by the University in arranging the supplies or getting the matter printed will be recovered from the supplier/printer and the security money shall stand forfeited to the University.

9. All disputes arising out of this Agreement and all questions relating to the interpretation of this agreement shall be decided by the Registrar of the University and the decision of the Registrar shall be final.

In witness whereof the parties hereto have set their hands on theday of.....in the year one thousand nine hundred and fifty.....of the Christian era.

Signature of the approved
supplier/printer.

Signature of the
Registrar
for and on behalf of the University
of Rajasthan, Jaipur.

Date.....

Date.....

attested by a Magistrate)
or a Gazetted Officer)

Witness No. 1—
Witness No. 2—

Witness No. 1—

Witness No. 2—

APPENDIX V

(Ref. Syndicate Res. No. 5 of October 11, 1958).

**Certificate to be furnished by
the Tenderer/Printer along
with the tender.**

I/We.....have read the conditions and terms of contract received from you along with the tender and agree to abide by them. I/We offer to do the works mentioned under items.....@ rates mentioned in my/our estimate attached hereto and hereby bind myself/ourselves to complete the jobs within the stipulated time from the date of the final order placed with me/us.

I/We further agree to sign an agreement bond to abide by the conditions and terms of the contract and to carry out all jobs according to the specifications given by the University. In case of acceptance of the tender by the University, I/We bind myself/ourselves to execute the agreement within 7 days of the receipt of the notice to that effect from the University failing which I/We shall have no objection to the forfeiture of the earnest money.

Full address of the
Tenderer/Printer (s)

Signature of Tenderer/
Printer (s)

Date.....

APPENDIX VI

(Ref. Syndicate Res. No. 5 of October 11, 1958)

Conditions of Tender and Contract

N. B. :- 1. These conditions should be read very carefully by the tenderers while filling in their quotations.

2. These conditions are common for Printing as well as Stationery.

1. The quotations must be enclosed in a properly sealed cover, duly superscribed as "Annual Tender form _____" and addressed to

"Shri K. L. Varma, M. A.,
Registrar,
University of Rajasthan,
Jaipur".

2. Rates for each item must be entered in words as well as in figures.

3. Tender forms should be filled in with ink or typed (neat and clean). Tenders containing erasures, alterations and over-writing are liable to be rejected. Any correction made by the tenderers in the entries of the tender must be initialled by him.

4. The tenderer shall be deemed to have carefully examined the conditions, specifications, size etc. of the jobs to be executed. In case of any doubt as to the meaning of any portion of these conditions or of the specifications etc., he shall before submitting the tender refer the same to the Registrar and seek clarification.

5. The approved printer/supplier shall not assign or sub-let the work or any part thereof allotted to him to any other agency.

6. The supplies will be in strict accordance with the samples of articles/paper submitted by the firms or presses and approved by the Registrar. The decision of the Registrar shall be final as to the quality of the articles and shall be binding upon the tenderers; and any supplies/paper not matching the approved sample shall be liable to be rejected or replaced and any expense or loss caused to suppliers as a result of rejection or replacement of supplies shall be borne entirely by the printer/supplier. The quality of the articles supplied shall be the best.

7. Sample of each item must accompany the quotations. Samples should be marked so as to correspond with items in tender. Weight, size and trade mark etc. must be mentioned on each sample. Samples should be sent freight paid so as to reach the Registrar on the fixed date and time

or earlier. Tenders will not be considered for such items as are without samples.

8. The rejected articles must be removed by the tenderer from this office within a period to be communicated to the tenderer by the office. The University will not be responsible for any loss, shortage or damage that may occur to it after the expiry of the said period.

9. The tenderer shall be responsible for the proper packing so as to avoid damage under normal conditions of transport and delivery of materials in good condition to the consignee at destination. In the event of loss, damage, breakage, leakage or any shortage, the tenderer shall be liable to make good such loss, damage, breakage, leakage or shortage at the checking and inspection of the materials by the consignee. No extra cost on this account shall be admissible.

10. Rates must be quoted F. O. R. Jaipur and should include all taxes. In case of local suppliers, they should also quote their rates inclusive of all taxes. No cartage for transportation will be paid by the University and the delivery of goods will be effected at the University premises. All prices quoted by the tenderers will be unchangeable for the period of contract irrespective of market fluctuations or other causes. All suppliers are required to send all R/Rs. freight paid. In case of indents for supplies by passenger train, half the freight will be borne by the University.

11. The tenderer whose tender is accepted shall arrange supplies within the stipulated time from the date of receipt of the orders. The quantity shown in the tender is approximate and subject to variation and the supplies will have to be arranged according to the actual requirements of the University throughout the year as and when orders are placed.

12. The contract of supply/printing can be repudiated if the printing/supplies is/are not made to the satisfaction of the Registrar or they are not found according to the approved samples. The suppliers will be liable to replace them at their own expense.

13. The tenderer should sign the tender form at each page at the end in token of the acceptance of all the terms and conditions of the tender and agreement. Tender must be accompanied by an earnest money of Rs. 500/- without which the tender will not be considered.

14. The amount should be remitted in either of the following forms:

- i) Cash.
- ii) P. O. Cash Certificates:
- iii) National Plan Certificates.

- iv) Fixed Deposit Receipt of any Scheduled Bank.
- v) Treasury Savings Deposit Certificate.

Numbers (ii) to (v) are to be sent in the name of 'The Registrar, University of Rajasthan, Jaipur.'

N. B.—The earnest money will be refunded to tenderers whose tenders have not been approved within one month of the final acceptance of the tenders. In case of other tenderers whose tenders have been approved, it will remain with the University as security money till the order given is executed satisfactorily.

15. Tenderers whose rates have been approved will have to execute an agreement in the prescribed form within 7 days from the day the order is placed for the due execution of the contract. No interest will be paid by the University on the earnest money. The expenses of completing and stamping the agreement shall be paid by the supplier/printer.

16. The earnest money of the tenderer shall be forfeited if the tenderer fails to execute the agreement bond in the given time after notification of the acceptance of his tender.

17. Payment will be made by cheques and collection charges, if any, will be borne by the firm/printer.

If the approved supplier/printer fails either to supply goods of the approved quality or to deliver the goods within the specified period, the Registrar shall be at liberty to arrange supplies through re-tender, after giving due notice in writing to supplier/printer to supply the remaining goods within a specified time. If the Registrar thinks fit, it shall be lawful for him to retain and supply any balance which may be due to the tenderer or to forfeit the earnest amount deposited by the tenderer and require the tenderer to make good the loss sustained or excess cost incurred by the University in arranging the supplies through any other agency. If for any unavoidable reason, extension of time in the supply of an article is required, it shall be obtained beforehand after giving adequate reasons. If this is not done, delay in the supply of each item will be penalised at the rate of Rs. 5/- to Rs. 10/- for each day of delay at the discretion of the Registrar and it will be binding on the tenderers.

18. The goods will be delivered at the destination godown in perfect condition in the case of local suppliers/printers.

19. The University is not bound to accept the lowest tender and may reject any tender without assigning any reason therefor. No tenderer shall demand explanation for the cause of rejection of his tender. Orders

can be placed for the whole or any part of the work at the discretion of the Registrar, whose decision will be final.

20. If the tenderer deliberately gives wrong information in his tender or creates circumstances for the acceptance of his tender, the Registrar reserves the right to reject such tender. Tenderers will have to submit along with the tender, an "Income-tax clearance certificate" or a "sworn affidavit" duly countersigned by the Income-Tax Officer of the circle concerned to the effect that he has no taxable incomes failing which a tender will not be considered.

21. No R/R. will be accepted by. V. P. P.

22. The legal proceedings, if any, to be instituted by any of the parties shall have to be lodged in the courts situated at Jaipur and not elsewhere.

23. No other conditions except those mentioned above will be entertained except by mutual consent.

24. Direct or indirect canvassing on the part of tenderers or their representatives shall lead to disqualification of the tender.

25. Non-compliance with any of the above conditions is liable to result in rejection of the tender.

26. All proof correction will have to be done by the printers at their own cost. Before putting it on the machine, final print order will be obtained from the University. Any mistakes found in the course of giving final print order will be penalised @ Rs. 2/- per mistake.

27. Bands after every hundred will be placed in all printed forms by the printers.

28. Ordinarily, 10 to 15 days time will be given for the execution of each order according to its nature and importance.

29. The University will be free to invite tenders for any items not covered in the tender from any one afterwards and the tenderer shall not object to it.

APPENDIX VII

(Ref. Syndicate Res. No. 11 of October 11, 1958)

The Science Sub-Committee of the University Education Re-organisation Committee met on 1st October, 1958 at 1.00 p.m. at the University Office, Jaipur. The following members were Present :

1. Principal V. Lakshminarayanan
2. Dr. K. P. Rode
3. Shri K. L. Varma (*Registrar*)
4. Shri V. G. Garde
(*Convener*)

1. The Committee considered the recommendation No. 5 made by the Faculty of Engineering at its meeting held on the 18th December, 1957 proposing that the Engineering Degree Course be of 5 years duration and candidates passing the Higher Secondary Examination (with Physics, Chemistry & Mathematics) be admitted to the first year of the Five-Year Engineering Course.

Resolved to recommend that the recommendation of the Faculty be accepted.

2. The Committee considered Resolution No. 6 passed by the Faculty of Engineering at its meeting held on the 18th December, 1957 to the effect that candidates who have successfully completed the first year of the Five-Year Engineering Degree Course may be admitted to the Second Year of the new Three-Year Degree Course B. Sc. In this connection the Committee also considered Resolution No. 6 of the University Education Re-organisation Committee passed at its meeting held on the 17th February, 1958 to the effect that the candidates who have passed the first year examination of the University of the Three-Year Degree Course with Physics Chemistry & Mathematics be considered eligible for admission to the second year of the proposed Five-Year Engineering Degree Course.

Resolved to recommend that candidates who have passed the first year of the Five-Year Engineering Degree Course be admitted to the second year of the new Three-Year Degree Course B. Sc. (with Physics, Chemistry & Mathematics Group).

Similarly candidates who have passed the first year examination of the Three-Year Degree Course B. Sc. (with Physics, Chemistry &

Mathematics) be deemed eligible for admission to the second year of the proposed Five-Year Engineering Degree Course and a reasonable percentage of seats be made available for such students.

Sd/-V. G. Garde
Convener.

APPENDIX VIII

(Ref. Syndicate Res. No. 21 of October 11, 1958)

Copy of D. O. No. 3719/CM/Se/58 dated the 9th October, 1958 from the Chief Minister, Government of Rajasthan, Jaipur to the Vice-Chancellor, University of Rajasthan, Jaipur.

I am enclosing for your information an extract from the Prime Minister's fortnightly D. O. letter received by me some time back. He has referred to one or two important points regarding educational matters which are of relevance in the broader set up of the present-day democratic and developmental needs of the country. I shall request you to consider them and let me have your views in due course.

Extract from Prime Minister's fortnightly letter dated the 9th June, 1958.

An eminent foreign economist was comparing the measure of work done in India to the quality and measure in Europe or America. He pointed out that we compared very unfavourably. First of all, we have too many holidays, secondly our hours of work are not adequate and thirdly we do not work intensively, and so as a result we produce much less than is done in many Western countries. This applies, he said, not merely to plants and factories, but all along the line, including agriculture, our offices, our teachers, our students and our politicians. I suppose his criticism is true, apart from individuals who have to work very hard. It is ultimately on the amount of work that the nation does that our production will depend, and it on that production that our progress will depend.

I have been thinking that it would be very good for our people to have a period of compulsory service for all young men and young women between certain age limits, say 19 to 22. In most countries of the Western world there is conscription for military service. This is not considered to be an infringement of their liberties or freedom. We do not want any such thing for military purposes, but some kind of compulsory period of training and service for every person appears to me to be very necessary. That period should be one year and for, say, six months in the year every one should live in camps under some kind of military discipline. This will give them discipline, physical health and capacity for manual work and to work together for productive schemes. The next six months might well be spent in productive social work. The type of work will depend on the capacity and training of the individual. Another advantage of this will be to bring together everyone on the same level, whether

he is rich or poor, and make him do exactly the same type of work, part of which will be manual.

The only objection that I can think of to such a scheme would be the difficulty of finding money for it. If the whole of India is brought into the purview of the scheme, this will be a very costly business. We need not start it in a very big way, although everyone between certain ages could be made liable, by law, and we can call them up in batches as convenient and feasible.

Another idea which has often been mentioned and with which I entirely agree, is that every graduate before he gets his degree, should put in a certain period of work in an allotted sphere. The kind of work will depend on his training and capacity. He may have to work in a village or in a tribal area. This would, of course, apply to medical graduates also as well as engineers and the like.

APPENDIX IX

(Ref. Syndicate Res. No. 23 (ii) of October 11, 1958)

We, the Chancellor, Vice-Chancellor
and the Members of the Senate of the

UNIVERSITY OF RAJASTHAN

JAIPUR,

Certify that the Degree of
DOCTOR OF SCIENCE

has been conferred on the _____ day of the month of _____
_____ in the year one thousand nine hundred and _____
_____ on _____
who has been found duly-qualified for the same.

The subject on which he presented a thesis for the Degree
was _____.

In Testimony where of are set the Seal of the said University and
the signature of the said Vice-Chancellor.

SEAL OF THE UNIVERSITY

Vice-Chancellor.

MINUTES OF A MEETING OF THE FACULTY
OF ARTS HELD ON WEDNESDAY THE
5TH NOVEMBER, 1958, AT 1-00 P. M.
AT THE UNIVERSITY OFFICE,
JAIPUR.

PRESENT :

Dr. M. L. Sharma, DEAN

(In the Chair)

- | | |
|------------------------------|----------------------------|
| 2. Dr. S. P. Varma | 3. Shri S. S. Saxena |
| 4. Shri R. S. Kapur | 5. Dr. M. S. Nigam |
| 6. Dr. P. L. Bhargava | 7. Dr. R. P. Singh |
| 8. Shri R. G. Ojha | 9. Shri A. N. Sharma |
| 10. Shri Hari Ram Tiwari | 11. Shri P. C. Jain. |
| 12. Dr. R. P. Singh | 13. Shri G. L. Joshi |
| 14. Shri V. R. Nagar | 15. Shri S. M. Sharma |
| 16. Shri N. M. Sahal | 17. Shri S. P. Tejpal |
| 18. Dr. D. C. Mathur | 19. Dr. A. U. Vasavada |
| 20. Shri N. K. Das Gupta | 21. Shri S. C. Tela |
| 22. Shri A. K. Sinha | 23. Shri Gurdial Singh |
| 24. Dr. K. L. Sahal | 25. Dr. S. P. Kaushik |
| 26. Shri K. K. Bhatnagar | 27. Shri Girraj Prasad |
| 28. Shri S. N. Dube | 29. Shri G. R. Sharma |
| 30. Shri Balbhadra Singh | 31. Shri Vishnu A. Joshi |
| 32. Shri K. M. Kaul | 33. Shri B. N. Kashiap |
| 34. Shri I. D. Rizvi | 34. Shri R. L. Sawal |
| 36. Dr. S. N. Gupta | 37. Shri Shiva Shauker |
| 38. Shri Ganesh Narain | 39. Dr. G. N. Sharma |
| 40. Dr. C. B. Rathie | 41. Shri N. D. Swami |
| 42. Dr. V. P. S. Raghuvarshi | 43. Shri B. S. Mathur |
| 44. Shri Kashi Prasad | 45. Shri H. B. Mishra |
| 46. Shri Bishan Sinha | 47. Shri Kedar Nath Kacker |
| 48. Shri G. G. Dravid | 49. Dr. Moti Lal Gupta |
| 50. Shri S. D. Derashri | 51. Shri S. L. Audichya |
| 52. Shri G. S. Jaiman | 53. Shri Sardar Singh |

- | | |
|-------------------------------|-------------------------------|
| 5. Shri P. G. Narayana | 55. Dr. P. T. Raju |
| 56. Mrs. S. Bhartiya | 57. Mrs. S. Banerjee |
| 58. Miss R. Padmani | 59. Dr. D. L. Gupta |
| 60. Mrs. S. V. Gupta | 61. Dr. S. S. Sharma |
| 62. Shri L. N. Upadhyaya | 63. Dr. N. D. Gautam |
| 64. Shri Surjan Das Swami | 65. Shri Hira Lal Sharma |
| 66. Shri M. L. Sahal | 67. Shri D. C. Datta |
| 68. Dr. Sohan Singh Sodhi | 69. Shri Kunj Beharilal Gupta |
| 70. Dr. R. N. Tiwari | 71. Shri B. N. Sharma |
| 72. Dr. R. N. Chowdhuri | 73. Dr. Satya Prakash |
| 74. Shri P. K. Majumdar | 75. Shri Prem Nidhi |
| 76. Shri M. R. V. Krishna Rao | 77. Prof. M. V. Mathur |
| 78. Shri M. B. Pant. | |

1. The minutes of the meeting of the Faculty of Arts held on the 19th December, 1957, were confirmed.

2. The Faculty co-opted Shri M. L. Solanki, Professor, S. M. K. College, Jodhpur and Mrs. S. L. Agrawal, Principal, Maharani's College, Kota from among teachers in affiliated colleges within the Faculty for the residue of the term of Shri G. S. Jaiman (since enlisted as an ex-officio member of the Faculty under Section 24A (1) (iii) of the Act and Shri P. C. Sahal (ceased).

3. (i) The Faculty appointed the following members on the below-mentioned Boards of Studies for the residue of the term of persons noted against each.

- | | |
|--------------------------------|---|
| 1. Board of Studies in English | Shri M. R. V. Krishna Rao,
Professor, Dungar College,
Bikaner vice Shri R. K.
Tripathi, Post-graduate
head (retired). |
|--------------------------------|---|

- | | |
|---------|---|
| 2. -do- | Shri M. L. Sahal, Principal,
Bangur College, Didwana
vice Shri T. C. Mathew
(retired). |
|---------|---|

- | | |
|--|---|
| 3. Board of Studies in
History & Archaeology. | Shri P. K. Majumdar,
Professor, Dungar College,
Bikaner, <i>vice</i> Shri B. B.
Goyal (retired). |
| 4. Board of Studies in
Drawing and Painting. | Shri Moni Sanyal, Lecturer,
Rajasthan Mahila Vidya-
laya, Udaipur, <i>vice</i> Shri
I. A. Motiwala (Left). |

The Faculty postponed the appointment of a Post-graduate head on the Board of Studies in Geography as it was reported that no post-graduate head was available at the moment.

3. (ii). In deference to the Syndicate Res. No. 8, dated the 27th February 1958 under which it up-held the Vice-Chancellor's ruling that since M/s N. R. Khargawat, S. P. Varma and S. S. Sharma had ceased to be post-graduate heads or teachers in which capacity they had been elected to their respective Boards of Studies they had ceased to be members of the Boards of Studies in History, Political Science and Hindi, respectively on account of their transfer as degree heads, the Faculty elected Shri R. S. Kapur, Principal, S. M. K. College, Jodhpur on the Board of Studies in History and Archaeology *vice* Shri N. R. Khargawat and re-elected Dr. S. P. Varma, Principal, Rajasthan College, Jaipur and Dr. S. S. Sharma, Professor of Hindi, Rajasthan College, Jaipur on the Boards of Studies in Political Science and Hindi respectively.

The Faculty, however, observed that in order to avoid any confusion about the persons who are post-graduate heads/teachers in future, there should be a clear-cut definition of a post-graduate head/teacher, especially as to whether a person who supervises research in the University but does not teach M. A. classes is to be regarded as a post-graduate teacher or not. Further, when the results of elections to Boards of Studies are declared in future it should be made clear as to which of the members represent the constituency of post-graduate heads/teachers.

4. The Faculty appointed the following members to constitute a Committee of Courses in Economic and Public Administration

(vide Academic Council Resolution No. 17, dated the 25th Feb., 1958) :—

- | | |
|--|---|
| 1. Shri K Vishwanathiah | { University Department of Economics and Public Admn. Jaipur. |
| 2. Prof. M. V. Mathur | |
| | { Teachers from the University Department of Economics and Public Administration, Jaipur. |
| 3. Shri S. D. Derashri | { Professor S. M. K. College, Jodhpur. |
| | { (Post-graduate teacher representative of the Board of Studies in Economics). |
| 4. Dr. V. K. N. Menon,
Director of Institute of Public Administration,
New Delhi. | { |
| 5. Dr. P. S. Loknathan,
Director General, National Council for Applied Economic Research,
New Delhi. | |
| | { Expert from outside. |

5. With reference to its Resolution No. 7, dated the 19th December 1957 under which it had referred the following recommendation No. 6, dated the 2nd September, 1957 of the Board of Studies in Economics to different Boards of Studies for expressing their views, the Faculty considered the recommendations of different Boards of Studies made at their meetings held in May, 1958 :—

*Ref. Res. No. 6 of the Board of Studies in Economics
held on 2nd September, 1957 :—*

"The Board recommended that the University should introduce a course in Research Methods and Techniques in the University Department of Economics, Jaipur, and enable those teachers in Economics in affiliated colleges who have

put in at least five years service to spend a year in the department while receiving their full salary”.

Resolved to recommend that since the majority of the Boards of Studies had agreed to the proposal of introducing a course of Research Methods and Techniques in the University Department of Economics, the same be approved subject to the modification that the duration of the course be three months and not one year, as proposed.

6. With reference to its Res. No. 10. dated the 19th December, 1957 under which it had referred the following proposal of Prof. S. D. Derashri, to the various Boards of Studies for expression of views, the Faculty considered the recommendations of the different Boards of Studies made at their meetings held in September, 1957 (postponed last time) :—

“Resolved that in each subject 20% of the marks should be reserved for the class work done by the candidates during the session, a cumulative record of which should be sent by the Principal to the University at the end of every term and should be tabulated there so that the marks can be added to those obtained in the examination. Resolved further that there should be at least six written exercises including terminal examinations, if any, held during each academic year and the Principals be authorised not to forward the forms of any candidate failing to meet this requirement”.

Resolved to recommend that the proposal of Prof. Derashri be agreed to in principle.

7. The Faculty considered the following recommendation of the Board of Studies in English as contained in its Resolution No. 6 of May 5 and 6, 1958 on the resolution passed at the 31st session of the All India Educational Conference regarding improvement in the standard of teaching English :—

“The Board considered letter No. 73, dated 25th February, 1958, from the General Secretary, All India Federation of

Educational Associations, Nagpur, along with the resolution passed at the 31st Session of the All India Educational Conference held in December to the effect that effective steps be taken to improve the standard of teaching English. The Board is fully in agreement with this resolution. The Board suggests that to raise the standard of English the prescribed text under compulsory English should be taught in detail just like the texts under English literature. A minimum of one period per day should be assigned for compulsory English as well as for English Literature for the Pre-University course and the first two years of the 3-year Degree Course. In the final year of the 3-year Degree Course, 9 periods per week should be devoted to the teaching of English Literature. For composition work the class should be divided into groups of not more than 20".

Resolved to recommend that the recommendation of the Board of Studies in English be accepted.

8. The Faculty considered the following recommendations of the Board of Studies in Philosophy and Logic as contained in its Resolution Nos. IV and V of 9th and 10th May, 1958 :—

Res. No. IV —

"The Board resolved to recommend that Philosophy should be treated, as in many foreign Universities like Illinois, California, Harvard, Yale and Columbia as part of both Social Sciences and Humanities".

Res. No. V.

"The Board, in view of Res. No. IV, is of the opinion that the course in General Education, can not be considered complete without Philosophy as General Education, for instance in Yale, is said to have a Philosophical back-bone."

Resolved to recommend that the recommendations of the Board be accepted.

9. The Faculty considered the following recommendation of the Board of Studies in Sociology as contained in its Res. No. 8 of 7th and 8th May, 1958 :—

“Resolved to recommend that Sociology be introduced as an optional paper for the Pre-University course in view of the fact that a paper on all other subjects taught at the B. A. level have been included in the Pre-University course. A proposed syllabus is appended, Vide Appendix A.”

Resolved that the recommendations be¹ referred back to the Board of Studies with the remark that until such a subject was included in the syllabus for the Higher Secondary Examination, it would not be useful to include it in the syllabus for the Pre-University Examination.

10. The Faculty considered the following recommendations of the Boards of Studies in Sociology and Economics as contained in their Res. No. 10 and 9 of 7th, 8th and 6th and 7th May, 1958 respectively—

Board of Studies in Sociology:

“With reference to the letter No. F. 36-5/58 (H), dated the 14th March, 1958 from the Secretary, University Grants Commission, New Delhi, regarding the introduction of ‘Forest Economy and Tribal Welfare’ or any aspect of it in the syllabus of Post-graduate studies, the Board observed, that a paper on Applied Anthropology, under the group ‘Social Anthropology and Tribal Welfare’ adequately covers a study of tribal welfare and the same be communicated to the Secretary, University Grants Commission along with a copy of paper number (ii) of Group A for M. A. Sociology.”

Board of Studies in Economics :

“The Board considered a letter No. F. 36-5/58(H), dated the 14th March 1958 from the Secretary, University Grants Commission, New Delhi, regarding introduction

of 'Forest Economy and Tribal Welfare' or any aspect of it in the syllabus of Post-graduate studies.

Resolved to recommend that Tribal Welfare and Forest Economy be not included as an independent paper in M. A. (Economics). However, students of 'Economic Survey' may carry out surveys regarding 'Forest Economy' as and when feasible.

Resolved that the recommendations of the Boards of Studies be accepted and the Secretary, University Grants Commission be informed accordingly.

11. The Faculty considered the following recommendation of the Committee of Courses in Music as contained in its Res. No. 5 of May 8 and 9, 1958:—

"It was resolved to recommend that a Board of Studies in Music may be formed instead of the present 'Committee of Courses in Music' as this subject has been introduced in degree classes."

Resolved to recommend that as the subject of Music had since been introduced in degree classes, a Board of Studies in Music in place of the present Committee of Courses be formed.

12. The Board considered the following recommendation of the Board of Studies in Drawing and Painting as contained in its Res. No. 6 of May 9 and 10, 1958:—

"The Board resolved to recommend that the minimum qualifications for teachers required for teaching degree classes as appearing in the minutes Volume XX (January 1957 to June 1957) page 117 be read as follows:—

1. Diploma in Painting from any recognised institution with Matric as the minimum qualification.
2. B. A. with Drawing and Painting having secured 1st class marks in Drawing and Painting with 5 years experience of the Intermediate in the subject."

Resolved that the recommendation No. 1 of the Board be not accepted, as the qualification of Matric was considered to be too low for teaching a degree subject.

13. The Faculty considered the recommendations made by a joint meeting of the conveners of the Boards of Studies in Economics, Mathematics and Geography held on the 9th May 1958, (*Vide Appendix I* to explore the possibility of evolving a common basis for fitting in Economics, Geography and Mathematics in the Three Years Degree Course which are common in the Faculties of Arts and Science.

Resolved to recommend that the recommendations of the Committee be approved.

14. With reference to Academic Council Res. No. 33 dated the 29th October, 1957, the Faculty considered the recommendation of the Faculty of Science as contained in its Res. No. 6 of the 24th January, 1957 to the effect that a student who had offered thesis at the M. Sc. (Final) examination, and had failed, must submit a thesis on a fresh subject when he re-appears at the examination.

Resolved to recommend that such a candidate be permitted to submit the same thesis again after bringing it up-to-date.

15. With reference to Syndicate Res. No. 3, dated 12th August, 1958, the Faculty considered the recommendations of the Committee, appointed by the Syndicate vide Res. No. 14, dated 28th January 1958, on the following observation made by the Senate at its meeting held on 8th December 1957 while considering the annual report of the University for revising Library Grants in various subjects for affiliated colleges made at its meeting held on the 9th February 1958 (*Vide Appendix II*):—

“The question of suitably raising the amount of grants (recurring and non-recurring) to be spent on purchase of books by the colleges affiliated in different subjects for post-graduate examinations be taken up for consideration as

the present grants were much too meagre to suitably equip the college libraries "

Resolved to recommend that the recommendations of the Committee with regard to Arts subjects be approved, subject to the modification that the recurring grant in Hindi and Sanskrit for post-graduate colleges be raised to Rs. 600/- p. a.

16 With reference to the Academic Council Res. No. 7, dated February 25, 1958, the Faculty considered the question of difining the scope of the term 'Bachelor's degree' contained in Ordinance 211.

Resolved to recommend that the term 'Bachelor's degree' be deemed to include every bachelor including the professional degree holders.

17. The Faculty considered the following proposal of Shri M. L. Sahal, Principal, Bangur College, Didwana as contained in his letter No. 1579, dated the 18th October 1958:—

"Rosolved that it was high time that the University took steps to stop the practice of appointing one Professor as Head of two Departments combined, even though he was not an M. A. in both the subjects. Desirable it is that there must be separate Heads of Departments for each and every subject at both Degree and Post-graduate levels. An exception may, howéver, have to be allowed in case of Degree Colleges, provided the Professor is an M. A. in both the subjects. In no case should a Professor be allowed to head two Departments at the Post-graduate level without being not only an M.A. in both the subjects but also possessing adequate experience of teaching Post-graduate classes. Urgent and expeditious steps may be taken by the University to set things right where there has been deviation in this respect in any of its affiliated colleges during the current session at least".

Resolved to recommend that the proposal be approved.

18. With reference to Government Order No. E. 1 (72) Edu/A/58, 58, dated the 15th October 1958 appointing Shri A. N. Bhattacharya, as Head of the Geography Department at M. B. College, Udaipur, it was reported that Shri G. N. Mathur, Offg. Professor of Geography, M. B. College, Udaipur at present a member of the Board of Studies in Geography as a Post-graduate head would cease to be a member of the Board with effect from 1st December, 1958 when Shri Bhattacharya was likely to join as informed by the Principal of the College, and to appoint a member on the Board for the residue of the term of Shri G. N. Mathur.

Resolved that till the new incumbent joined the post, Shri G. N. Mathur would continue to be a member of the Board.

19. After nothing (as reported by the Registrar) the various steps taken by the University leading to the introduction of the Three-Years Degree Course, the Faculty considered the recommendations made by the Boards of Studies/Committee of Courses, regarding courses of study and text-books for the Post-graduate and Degree (Conventional Scheme) Examinations of 1950 and 1961; the First Year Examination of 1960, the Second Year Examination of 1950 and 1961, the Final Year Examination of 1961 and 1962 (3 Year Degree Course Scheme) and the Pre-University Examination of 1960 (in accordance with the schemes of examinations (*vide Appendices III & IV*) approved by the Academic Council and the Syndicate at their meetings held on 25th February and 27th February 1958 respectively in various subjects of the Faculty, at their meeting held in May/September, 1958.

In this connection the Faculty also noted the action taken in emergency by the Vice-Chancellor (under authority given by the Syndicate *vide* its resolution No. 12 dated the 27th February 1958) in allowing (on the persistent request of the State Government) introduction of Three Year Degree Course with effect from July 1958 in 13 affiliated Government colleges in the interest of the candidates who passed the Higher Secondary Examination of the Board of Secondary Education, Rajasthan, in 1958.

*Note :—*The reports of the meetings of the Boards of Studies/Committees of Courses are printed as Appendix.

ces A to P. The letters and numbers in brackets indicate the appendix and number of the resolutions concerned passed by the respective Boards of Studies/Committees of Courses.

Resolved to recommend that the courses of studies and text-books and the additions and/or alterations in Ordinances & Regulations recommended by the Boards of Studies/Committees of Courses be accepted as given below :—

English. (A—1) Modification—

A. G. Gardiner Alpha of the Plough (Macmillan) recommended as a text-book for the Pre-University Examination be referred back to the Board of Studies for reconsideration (by correspondence) as the book was reported to be rather stiff for that standard).

Philosophy & Logic. (B—1).

Pol. Sc. & Civics (C—3).

History and Archaeology (D—1).

Economics (E 1—1 & E. 2—1).

Sanskrit (F 1—1 & F 2—1).

Hindi (G—1, 2 6, & 7).

Urdu, Persian & Arabic. (H—1 and 2).

Sociology. (1—1, 2 and 7) It be suggested to the Convener of the Board that one or two books in English may be added to the books recommended for study at the Three-

Year Degree Course examinations as all the books recommended were in Hindi.

- Geography (J—1 & 2).
- Mathematics. (K—1 and 2).
- Drawing &
Painting. (L—1 and 2).
- General
Education. (M—1 and M 2—1).
- Music. (N—1 and 2).
- Home Science. (O—1, 2 and 5).
- ; Econ. & Pub.
Admn. (P).

M. L. Sharma
; Dean.

APPENDIX I

(Ref. Faculty of Arts Res. No. 13 of November 5, 1958)

Minutes of a meeting of the Conveners of the Boards of Studies in Economics, Mathematics, and Geography held on Friday, the 9th May 1958 at 3 p. m. at the University Office, Jaipur.

Present :

1. Professor S. R. Mittal
2. " G. Narain
3. " M. V. Mathur

The Committee discussed the possibility of evolving a common basis for fitting in Economics and Geography in the Faculty of Science and Mathematics in the Faculty of Arts and resolved to recommend-

1 That there be three examinations-

One at the end of each of the three years of the three year degree course in Economics, Geography and Mathematics (without affecting the scheme of examination for other Science subjects) in both the Faculties of Arts and Science (This will require a little change in the existing scheme of the Faculty of Science for Mathematics).

2. That the distribution of papers and total marks for the three examinations for these three subjects in the Faculties of Arts and Science be as follows :

Faculty of Arts

Faculty of Science

Mathematics :-

Mathematics :-

First Year-Two papers of
50 marks each-
100 marks.

First Year-Two papers of
75 marks each-
150 marks.

Second Year-One paper of
100 marks.

Second Year-One paper of
100 marks.

Third Year-Two papers of
100 marks each-
200 marks.

Third Year-Two papers of
100 marks each-
200 marks.

Total 400 marks

Total 450 marks

Geography :-

First Year—One paper of
100 marks.

Second Year—One paper of
100 marks.

Third Year—Two papers of
75 marks each—
150 marks.

Practical Examination
& Field Work 50 marks.

Total 400 marks

Geography :-

First Year—One paper of
125 marks.

Second Year—One paper of
100 marks.

Third Year—Two papers of
75 marks each—
150 marks.

Practical examination
& Field Work 75 marks.

Total 450 marks

Economics :-

First Year—One paper of
100 marks.

Second Year—One paper of
100 marks.

Third Year—Two papers of
100 each—
200 marks.

Total 400 marks

Economics :-

First Year—One paper of
100 marks.

Second Year—One paper of
125 marks.

Third Year—Two papers
Paper III—125 marks
Paper IV—100 marks

Total 450 marks

Note :- Papers for both the Faculties
will be identical even though
in some cases the maximum
marks for the two Faculties
may differ.

e. g. First Year Examination of the three Year Degree Course

Geography

Paper I—Principles of Physical Geography

Time : Three Hours

Maximum Marks B. A.—100
B. Sc.—125

S R. Mital

G. Narain

M. V. Mathur

APPENDIX II

(*Ref. Faculty of Arts Res. No. 15 of November 5, 1958*)

Minutes of a meeting of the Committee appointed by the Syndicate *vide* its Resolution No. 14 of January 28, 1958, held on the 9th February, 1958 at 11. 00 a.m. at the University Office, Jaipur.

Present :

1. Dr. S. M. Mitra
2. Principal C. B. Gupta
3. Principal K. K. Chaturvedi
4. Dr. M. L. Sharma

(*Convener*)

It was unanimously *resolved* that the recurring and non-recurring grants for library books for each subject in affiliated colleges be revised as given in *Appendix 'A'*.

A note by the Dean of the Faculty of Commerce is also attached (*Vide Appendix 'B'*) explaining the necessity of what may appear to be an abnormal enhancement in the grant for Commerce books.

M. L. Sharma
Convener.

Appendix 'A'

Minimum Recurring and Non-recurring grants for Library books for each subject in affiliated colleges.

Subject of Study.	DEGREE COLLEGES		POST-GRADUATE	
	Recurring	Non-P. A. Recurring.	Recurring	Non-P. A. Recurring.
	Rs.	Rs.	Rs.	Rs.
1. English.	400/-	1,000/-	600/-	1,200/-
2. Philosophy	300/-	600/-	600/-	1,200/-
3. History	300/-	600/-	600/-	1,200/-
4. Sociology	300/-	600/-	600/-	3,000/-
5. (a) Economics	300/-	600/-	600/-	1,200/-
'b) Public Administration.				
6. Urdu/Persian/Arabic	110/-each.	200/-	225/-each	300/-
7. Hindi/Sanskrit	300/-each.	600/-each.	500/-	1,000/-
8. Mathematics	350/-	700/-	750/-	2,000/-
9. Chemistry & Physics	350/-each.	700/-	750/-	2,000/-
10. Zoology & Botany	300/-	600/-	750/-	2,000/-
11. Political Science	300/-	600/-	600/-	1,200/-
12. Commerce	1,000/-	5,000/-	1,000/-	5,000/-
13. Geography	250/-	600/-	600/-	5,000/-
14. Drawing & Painting	200/-	1,000/-	—	—
15. General Periodicals	200/-			
16. Miscellaneous	250/-			
17. Books for reference.	200/-	1,000/-	3,000/-	2,000/-
18. Binding	100/-		200/-	

Appendix 'B'

The following are the subjects, compulsory and optional, which are prescribed for the B. Com. Examination :

1. Languages
2. *Accountancy* : Accountancy, Auditing, Income-Tax and Cost Accounting
3. Commercial Law
4. Industrial Organisation
5. Statistics
6. Economics
7. Economic Development
8. Economic and Commercial Geography
9. Banking
10. Actuarial Mathematics
11. Trade and Transport
12. Insurance
13. Rural Economics and Co-operation
14. Secretarial Practice

The amount of Rs. 1,000/- for recurring expenditure on books on Commerce for the Library of an affiliated college, preparing for B. Com. Examination of the University, as recommended by the Committee, seems to be reasonable rather low in view of the large number of subjects and students offering Commerce and also even if these subjects were equated with subjects like Persian and Arabic which have been allotted a sum of Rs. 110/- each where the number of students offering them can be safely counted on fingers.

It may further be pointed out that a Committee appointed by the Faculty of Commerce for the purpose of recommending non-recurring grants for providing minimum equipment and requirements also has recommended a recurring grant of Rs. 1,000 for the books on Commerce subjects for the libraries of the affiliated colleges preparing for B. Com. Examination.

C. B. Gupta
Dean.

Appendix A

(Ref. Faculty of Arts Res. Nos. 7 & 19 of November 5, 1958)

Minutes of a meeting of the Board of Studies in English held on 5th May 1958 at 12.30 p.m. and on the 6th May at 7.30 a.m. at the University Office, Jaipur.

Present :

1. Shri Bhim Sen
2. Shri S. J. B. Mathur
3. Shri N. Sahal
4. Shri T. C. Mathew
(Chairman)

The following decisions were taken.

1. Pre-University Course (Scheme)
General English (Compulsory)

One Paper—	Max. Marks.	Min. Marks	Time.
	100	33	3 hours.

The paper shall consist of the following two sections—

Section (i)	Texts (to be studied in detail)	—	50
„ (ii)	(a) Grammar	15	} — 50
	(b) Composition	25	
	(i) Essay writing		
	(ii) Letter writing		
	(iii) Story writing		
	(iv) Expansion		} — 50
	(c) Translation from Hindi to English—	10	

Syllabus :

The paper shall consist of two sections— (i) Texts (ii) Grammar and Composition—

- (i) Texts to be studied in detail — 50 marks.

The section shall contain one question in context and explanation.

Texts recommended :

- (a) Mr. Pickwick : Charles Dickens. The (Pilot Books).
University of London Press Ltd. Price -/12/-

- (b) A. G. Gardiner : *Alpha of the Plough* (Macmillan).
 (c) Poetry for Pleasure—Selected by Maung Kaung (O.U.P.)
 Price Rs. 1/4-.

The following poems are prescribed—

- Lochinvar — Sir W. Scott.
 Snare — James Stephens.
 She Walks in Beauty— Lord Byron.
 War Songs of Dinas Vawr— T. L. Peacock.
 The Character of a Happy Life—Henry Wotton.
 I remember, I remember—Thomas Hood.

(ii) Grammar, Composition and Translation.

This section shall consist of 3 parts :—

- (a) Grammar :— 15 marks.

Direct and Indirect Narration. The transformation of sentences. The synthesis of sentences

Tense usage : The Sequence of tenses. Use of Auxiliary verbs.

Idioms in words, phrases and constructions.

Uses of Articles. Punctuation.

- (b) Composition including :—

(i) Essay writing.

(ii) Letter writing.

(iii) Story writing.

(iv) Expansion. 25 marks.

- (c) Translation :—

From Hindi to English. 10 marks.

Books recommended :—

Nesfield's Idiom, Grammar and Synthesis, Book IV Parts II & III.

Wren & Martin : High School English Grammar & Composition.

Rowe & Webb : Hints on the study of English Chapters IV, VI & VII.

Bartley & Banerjee : A Guide to English Composition (O.U.P.)

Francis : High School Grammar & Composition.

2. English Literature

Optional

- (a) Purposive Reading edited by S. Subramanyam
P. T. I. Publishing House, Bangalore.
(Delete lessons No. 3, 10, 15, 18 & 23).
- (b) The Merchant of Venice (A Shorter Shakespeare series)
Published by Ginn & Co. Ltd.
- (c) Poetry for Pleasure—selected by Maung Kaung—(O. U. P.)
Price Rs. 1/4-.

The following poems are prescribed :—

The Lady of Shalott	: Lord Tennyson.
The Pig Tail	: W. M. Thackeray.
The Solitary Reaper	: W. Wordsworth.
All That's Past	: Walter de la Mare.
Light	: F. W. Bourdillon.
Breathes there the man with soul so dead	: Sir W. Scott.
Ulysses	: Lord Tennyson.
Virtue	: George Herbert.

N. B.—The colleges shall devote 6 periods to General English (Compulsory) and 6 to English Literature (optional).

THREE-YEAR DEGREE COURSE

I & II Year of Three Year Degree Course

English (Compulsory)

One Paper	Max. Marks	Min. Marks	Time
	100	36	3 hours.

The paper shall consist of the following two sections :—

Section (i)	Texts (to be studied in detail)	—	50 marks.
,, (ii)	Grammar	— 15	} — 50 marks.
	Translation	— 10	
	Essay and Expansion	— 25	

Syllabus:

The paper both in I and II year shall consist of two sections :—

- (i) Prescribed texts to be studied in detail. The section shall contain one question on context and explanation.

Texts Books recommended:

Year :

- (a) Thinking for Tomorrow edited by P. E. Dustoor
Published by Har Prasad Bhargava, Educational Publisher, Agra.
- (b) Ten Short Stories—Nelson.

II Year :

- (a) Some Tasks for Education—Livingstone—O. U. P.
Price 2/8/-
- (b) Abraham Lincoln by J. Drinkwater. Longmans.

(ii) Grammar and Composition :—

I Year :

The same as for Pre-University.

Grammar	—	15 marks.
Translation	—	10 „
Essay and Expansion	—	25 „

II Year :

Grammar—Idioms, phrases and correction of sentences	—	10 marks.
Precis-writing	—	15 „
Essay	—	25 „

Optional—English Literature.

The following books are prescribed :

I Year :

- (a) An Anthology of English Prose : Nag & Dwivedi
O. U. P.
- (b) Modern Short Plays Second Series (Treasury of
Modern Prose). University of London Press.

II Year :

- A Mid Summer Night's Dream—Shakespeare.
- The Return of the Native—Thomas Hardy.
- Standard English Poem edited by C. B. Young & Srinivas
Iyengar. (O. U. P.)

The following poems are prescribed :

Milton : L' Allegro; II Penserose.

Marvell : The Garden

Gray : The Bard.

Wordsworth : The Prelude. ll. 357-424.

Colaridge : Kubla Khan

III Year :

Paper I

Hamlet : Shakespeare.

The Silver Box : John Gals Worthy (Gerald Duckworth & Co. Ltd.). Price Rs. 3/-.

Standard English Poem edited by C. B. Young & Srinivas Iyengar. (O.U.P.,

The following poems are prescribed :

Keats : Ode to a Nightingale; Ode on a Grecian Urn;
To Autumn.

Shelley : Hymn of Pan.

Tennyson : Ulysses.

Browning : The Last Ride Together.

Arnold : Dover Beach.

Yeats : The Tower.

Brooke : Menelaus and Helen; The Soldier.

Hodgson : The song of Honour.

Lawrence : Shake.

Paper II

India Rediscovered an abridged version of the Discovery of India by Jawahar Lal Nehru edited by C. D. Narasimhaiah (O. U. P.) Price Rs. 3/8/-.

Pleasure and Purpose-

An Anthology of Fact and Fiction published by Longmans Green & Co. *Omitting the Lessons No. 2, 9, 14, 20, 24 & 32.*

M.A. PREVIOUS OF 1960.

Paper I

(a) 4 Substitute

The Poems of Tennyson and Matthew Arnold.
Lawrence Binyon by P. M. Jones: Modern
Verse (1900-1940) O. U. P.

Only the following poets are prescribed :—

1. Robert Bridges
2. W. B. Yeats
3. Walter De la Mare
4. John Masefield
5. T. S. Eliot
6. Wilfred Owen
7. Cecil Day Lewis
8. Louis Macneice
9. G. M. Hopkins
10. W. H. Auden
11. Stephen Spender
12. Dylan Thomas
13. Rupert Brooke
14. Siegfried Sassoon

(b) General Study—

1. *Substitute*—P. M. Jones: Modern Verse by the poems of Tennyson & Matthew Arnold in BK V of Palgrave's Golden Treasury edited by Lawrence Binyon. Macmillan.

Paper II

1. *Substitute*—As you Like It and the Winter's Tale for Much Ado About Nothing and the Tempest.
2. *Substitute*—The Alchemist for Volpone.
3. *Substitute*—Sheridan's The School for Scandal for Congreve's The Way of the World.

Paper III—No change.

Paper IV—No change.

M.A. FINAL 1961

Paper I— No change.

Paper II—(a) *Substitute*—The Nun's Priest's Tale for the Knight's Tale.

Paper III *Substitute*—Ivanhoe for Old Mortality
Meredith Ordeal of Richard Feverel for
The Egoist.

B. A. 1961

GENERAL ENGLISH

Paper II—

Substitute—One-Act Plays of Today Second Series
Harrap's Modern English series

for

Ten Selected One-Act Plays by Max H.
Feller.

and *Substitute*

Landmarks in Civilization & culture
edited by Jaidev Singh

Published by Sri Ram Mehra & Co.

for

Ideas That Moved the World.

English Literature—No change.

2. Under Section 34 (4) (iv) of the University Act, Shri S. J. B. Mathur was elected to serve on the committee for selection of examiners in English.
3. Since all the information required was not available, Prof. S. J. B. Mathur was authorized to contact the University later and finalise the panel of examiners for 1958-59.
4. The Board went through the question papers set for the examinations of 1958 and had no comments to offer.
5. With reference to the Faculty of Arts Res. No. 7 dated the 19th December 1957, the Board did not reach favourably to the proposal of the Board of Studies regarding introduction of Refresher Courses.
6. The Board considered letter No. 73 dated 25th February 1958 from the General Secretary, All India Federation of Educational Associations, Nagpur, along with the resolution passed at the 31st Session of the All India Educational Conference held in December to the effect that effective steps be taken to improve the standard of teaching English. The Board is fully in agreement with this resolution. The Board suggests that to raise the standard of English the prescribed texts under compul-

sory English should be taught in detail just like the texts under English Literature. A minimum of one period per day should be assigned for compulsory English as well as for English Literature for the Pre-University Course and the first two years of the 3-Year Degree Course. In the Final year of the 3-Year Degree Course. In the Final year of the 3-Year Degree Course, 9 periods should be devoted to the teaching of English Literature. For composition work the class should be divided into groups of not more than 20.

7. The Board suggested a fresh panel of referees to evaluate a thesis on the subject. A study of the Realistic Development in the Modern Irish Drama.

T. C. Mathew
Convener.

APPENDIX B

(*Ref. Fac. of Arts Res. Nos. 8 and 19 of November 5, 1958*)

Minutes of the meetings of the Board of Studies in Philosophy and Logic held on the 9th and 10th May 1958 at 12.30 p. m. and 9. a. m. respectively at the University Office, Jaipur.

Present :

1. Dr. R. P. Singh
2. Principal Mrs. S. Bhartiya
3. Dr. A. U. Vasavada
4. Dr. D. C. Mathur
5. Dr. B. L. Atreya (present on the 9th only)
6. Prof. P. T. Raju (*Convener*)

I. The Board recommended the courses of study for the following examination :

(1) PRE-UNIVERSITY COURSE—

Scheme:	Max. Marks	Min. Pass Marks	Time
LOGIC			
One Paper: Logic (Deductive & Inductive)	100	33	3 hrs.
PSYCHOLOGY			
One Paper: Elements of Psychology.	100	33	3 hrs.

Syllabus :

Paper I—Logic (Deductive and Inductive).

Deduction : Nature of Logic, Laws of Thought. Terms; their Denotation and Connotation. Propositions, their kinds and their opposition. Immediate inference: Conversion and obversion, Syllogism: Categorical, Hypothetical and Disjunctive. Dilemma Figures; Fallacies.

Induction : Nature of induction. Causation. Observation and experiment. Imperfect induction and analogy. Mills' methods. Relation of induction to deduction. Fallacies.

Books recommended :—

Candidates are expected to read only the topics given above and within the scope and treatment of the following books:—

1. Mellone : Elements of Modern Logic (University Tutorial Press, London).

2. Creighton and Smart : Introductory Logic (First two parts only).
3. Latta and Macbeath : Elements of Logic.
4. H. R. Bhatia : Fallacies in Logic (Datta Bros., Ajmer).
5. B. K. Jain : Tarkasastra (Hindi).

Paper II—Elements of Psychology.

Nervous system. Sense Organs and the brain. Nature and methods of psychology. Sensation. Perception. Memory. Imagination. Thinking. Feeling. Emotion. Sentiment. Instincts. Learning. Intelligence. Conflict and mental mechanisms. Dreams. Personality. Social Behaviour.

Books recommended :

Candidates are expected to read only the topics given in the above syllabus and within the scope and treatment of the following books :—

1. Rex and Margaret Knight : A modern Introduction to Psychology. (University Tutorial Press, London).
2. Morgan and Gilliland : Introduction to Psychology.
3. S. Jalota : Introduction to Psychology.
4. Kasyapa : Samanya Manovijana.
5. L. C. Sharma : Manovijnana.
6. The Hindi Translation of Morgan and Gilliland—*Introduction to Psychology* (Indian Press, Allahabad).

(2) (a) FIRST YEAR OF THREE YEAR DEGREE COURSE : 1959.

One Paper.	Max. marks	Min. Pass Marks	Time
	100	36	3 hrs.

Syllabus :

Indian Philosophy.

Books prescribed :

1. Hiriyanna : Essentials of Indian Philosophy.
2. Radhakrishnan : Hindu View of Life.

Books recommended :

Datta and Chatterji : Introduction to Indian Philosophy (English edition and Hindi translation).

(b) SECOND YEAR OF THREE YEAR DEGREE COURSE.

Gae Paper	Max. Pass Marks.	Min. Pass Marks.	Time
Either—(i) <i>Ethics & Social Philosophy</i> —			
Section A—Ethics Section B—Social Philosophy	} 100	36	3 hrs.
Or —(ii) <i>Experimental Psychology</i> —			
Theory — 50 Practical — 50	} 100	36	3 hrs.
Or —(iii) <i>World Religions</i> —	100	36	3 hrs.

Syllabus :

(i) *Ethics and Social Philosophy* :—

This paper is to be divided into two Sections—A and B.

Section A : Ethics—

The problem and scope of ethics—Psychological analysis and ethical significance of Desire, Volition, Motive, Intension, Conduct and Character—Nature and object of Moral Judgment—Principal theories of the Moral standard : The standard as law, external law, the law of conscience, the law of reason; The standard as Pleasure, Hedonism and its varieties; The standard as Perfection; the standard as value, instrumental and intrinsic values.

Book Prescribed :

Lilly : Introduction to Ethics (Only the portions dealing with the above topics are to be covered).

Section B : Social Philosophy—

Books Prescribed :

Mac kenzie : Social Philosophy (The book is to be taught as a text).

(ii) *Experimental Psychology* :—

This subject should be divided into two parts. The first part will be theory and carries 50 marks; the second part will be a practical examination for another 50 marks.

Theory:

Book Prescribed :

Boring and Other : Foundations of Psychology
(Chapman Hall, London).

Practicals :

Dr. P. T. Raju is authorized to select practicals.
(given vide Appendix I).

Books recommended :

1. Collins and Drevel : Laboratory Guide to Psychology.
2. Boring, Longfield & Weld : Manual of Laboratory Experiment in Psychology.

(iii) *World Religions :—*

Book Prescribed:

S. G. Champion and Dorosby Smark : Readings from World Religions (Watts and Co., 5 and 6 Johnson's Court, London, E. C. 4).

Books recommended:

1. G. L. Berry : Religions of the World (Barner and Nobles Inc. New York).
2. Sidney Cawl : Living Religions of the East (Dackworth, 3 Henrietta Street, London).
3. E. J. Jurji : The Great Religions of the Modern World—(Princeton University Press, Princeton, New Jersey).

(c) FINAL YEAR OF THREE YEAR DEGREE COURSE.

	Max. Marks	Min. Pass marks	Time
Paper I—Psychology	100	)	3 hrs.
Paper II—Metaphysics & Theory of Knowledge	100	)	3 hrs.
		72	

Syllabus :

Psychology :—

No syllabus is to be prescribed, the whole prescribed book is to be taught.

Book prescribed—

Woodworth : Psychology—A Study of Mental Life.
(English edition and Hindi translation).

Metaphysics and Theory of Knowledge—

No syllabus is to be prescribed, but the two prescribed books are to be taught.

Books prescribed:

1. Cunningham : Problems of Philosophy.
2. Woozley : Theory of Knowledge.

Book recommended :

1. Harish Gopal Tewari : Darsanasastra ka Mulatattva.

(3) B. A. Examination for 1961 (Conventional Scheme)

The same as for the examination of 1960.

(4) M. A. (Previous) & M. A. (Final) Examinations of 1961.

The same as before except for the following :—

(i) Group G. *Paper VII. Experimental Psychology—*

This paper is to be divided into two examinations, theory and practical, each carrying 50 marks.

Book prescribed for Theory—

T. G. Andrews : Methods on Psychology.

Book prescribed for Practicals—

C. S. Myers : Experimental Psychology.

Books recommended both for Theory and Practicals :

1. Boring, Longfield and Weld : Manual of Psychological Experiments.
2. Crafts and Others : Recent Experiments in Psychology.
3. Woodworth : Experiment Psychology.
4. Garrett : Great Experiments in Psychology.

(ii) Practicals:

Dr. P. T. Raju is authorised to prepare a list of practicals for examination (Given *Vide* Appendix II)

II. Under Section 34 (4) (iv) of the University Act, the Board elected Dr. D. C. Mathur to serve on the Committee for the Selection of Examiners in Philosophy.

III. The Board reviewed the question papers set for B. A. and M. A. examinations for 1958 and offered the following comment :

Paper III—Logic and Scientific Method—

Almost the whole of Section A is out of course.

The questions were not set from the book prescribed, though there is a definite directive to that effect.

Groups I and L.

Social and Political Philosophy—

(i) The questions from No. 6 are too general.

(ii) There is not even a single specific question from Barker's book, which is prescribed as a text.

IV. The Board resolved to recommend that Philosophy should be treated, as in many foreign Universities like Illinois, California, Harvard, Yale and Columbia, as part of both Social Sciences and Humanities.

V. The Board, in view of resolution IV, is of the opinion that no course in General Education, can be considered complete without Philosophy as General Education for instance in Yale, is said to have a philosophical back-bone. The Appendix of topics to be sent.

VI. The Board recommended four names of examiners for the thesis—"A study of Intelligence of Rajasthan Children of the Age-Groups 12 to 14 years reading in the school grades above".

VII. The Board revised the panel of examiners for 1958-59.

P. T. Raju

Conyener.

Appendix I

*(Ref. B. O. S. in Philosophy & Logic. Res. No. I (2) (b)
of May 9 & 10, 1958.)*

B. A. Three Year Course.

Experimental Psychology : Practicals.

1. Simple methods of determining the Capacity of sensory discrimination
A sthesiometry.
2. Range of hearing. Campimetry.
3. Colour matching.
4. Tactual localization. Touch spots. Two-point threshold. Weight
discrimination.
5. Time Perception (Intervals).
6. Illnsion.
7. Phi Phenomenon.
8. Nonsense syllables. Memory for digits.
9. Human Maze (Finger).
10. Substitution (digits.)
11. Transfer of training (mirror drawing).
12. Concept formation. Generalization, Sorting.

Appendix II

(Ref. B. O. S. in Philosophy & logic Res. No. I (4) (ii) of
May 9 & 10, 1958)

M. A. Experimental Psychology.

Practicals.

1. Image Type : Kraepplins method.
2. Figural after-effects vision and Kineasthesis.
3. Memory : Learning method; recall of completed and uncompleted tasks.
4. Attention : Method distraction.
5. Emotion ; Methods of expression; XO Tests.
6. Reaction time : Chronoscopy; influence of set on reaction time.
7. Muscular fatigue.
8. Mental fatigue.
9. Maz learning.
10. Intelligence tests.
11. True-false tests.
12. Analogies Tests.
13. Multiple Choice tests.
14. Introversion-extroversion tests.

APPENDIX C

(Ref. Fac. of Arts Res. No. 19 of Nov. 5, 1958)

Minutes of the meeting of the Board of Studies in Political Science held on the 6th & 7th May, 1958, at 12. 30. P. M. and 7. 30 A. M. respectively at the University Office, Jaipur.

Present :

1. Dr. R. R. Kasliwal
2. Prof. S. L. Audichya
3. Prof. K. M. Kaul
4. Mrs. D. Upadhaya
(*Convener*)

1. Under Section 34 (4) (iv) of the University Act, Dr. R. R. Kasliwal was unanimously elected to serve on the Committee for selection of Examiners in Political Science.

2. As the panel of internal examiners for 1958-59 was not received, it will be revised and submitted later.

3. The Board recommended Syllabuses and Text-books for the (i) Pre-University Course (ii) I, II & III year of the Three Year Degree Course and (iii) B. A. examination of 1961 and M. A. of 1961.

Syllabus :—

A. PRE-UNIVERSITY COURSE—CIVICS

One Paper	Max. Marks.	Min. Pass Marks.	Time
Part I—Civics Theory Part II—Indian Civic life & Administration.	100	33	3 hours.

Syllabus :—

The paper shall consist of two parts and at least two questions to be answered from each part.

Part I Civics Theory.

1. Meaning, Scope and methods of Civics. Its relations with other Social Sciences : Sociology, Ethics, Political Science and History. Importance of the study of Civics.
2. Society—Its nature, origin and development. Relation of individual and society.

3. Associations—and their kinds.
4. Citizenship—Meaning—Citizen and Alien—How acquired and lost—Rights and Duties of Citizens with special reference to Indian conditions. Hinderances to good citizenship.
5. State—Definition—Elements—and Origin—Distinctions between State, Society, Government and Nation.
6. Civic—Concepts—Law—Liberty—Equality and their Inter-relationship.
7. Constitutions—Meaning and Characteristics—classification Unitary, Federal, Parliamentary and Presidential.
8. Government—Structure—Executive—Legislature, and Judiciary—Separation of powers—Democracy its merits and demerits—Conditions for successful working—Public opinion—Political parties—Welfare state.

Part II—Indian Civic Life and Administration

1. An outline study of the present constitution of India—Salient features—Fundamental Rights—Directive principles of State Policy.

Union Executive—President—Prime Minister and Cabinet—Union Parliament—composition powers.
Judiciary—Supreme Court.

2. States—Relations between the Centre and the States—Administrative organisation of Rajasthan—Executive, Legislature and Judiciary—District Administration.
3. Local Government in Rajasthan—Municipalities and Village Panchayats. Importance of Local Self Government.
4. Growth of Indian Nationalism—Its close relationship with the Religious and Social Reform movements.

An outline study of the freedom movement—Hinderances to the growth of Nationalism—Communalism—Casteism etc.

5. An outline study of the first and second five year plans.

Books recommended :—

1. A. D. Pant : नागरिक शास्त्र के आधार
(Central Book Depot—Allahabad)
2. Gupta & Krishna : Elements of Civics
(Both Hindi & English)

3. Sateyketuvidyalankar : नागरिक शास्त्र के सिद्धान्त (सरस्वती सदन, मद्रास) मूल्य ३॥)
4. Parmatma Saran : नागरिक शास्त्र के सिद्धान्त
5. Parmatma Saran : भारतीय प्रशासन और नागरिक जीवन
(Goyal Publishing House-Meerut).
6. Palande : Hindi Version of Introduction to Indian Administration.
7. Raj Narain Gupta: भारतीय संविधान और नागरिक जीवन
8. Amba Datt Pant: भारतीय संविधान तथा नागरिकता
(Central Book Depot-Allahabad).

E. FIRST YEAR OF THREE YEAR DECREE COURSE.

	Max. Marks.	Min. Pass Marks.	Time
One Paper	100	36	3 hours

Syllabus :-

Paper I :-Political and Constitutional Development of India.

Indian Political Development-1885 to the present Day-
Landmarks in Indian Constitutional Development from
1919 to the present day-A detailed study of the present
constitution of India.

Books recommended :

1. Bombwal : Indian Politics and Government
2. Raghuvanshi : Indian National Movement and Thought.
3. Ram Gopal : भारतीय राजनीति Victoria to Nehru.
4. Coupland : The Indian Problem-1833-1935.
5. Coupland : Indian Politics 1936-1942.
6. Independence of India Act-1947.
7. G. N. Joshi : The New Indian Constitution.

C. 2nd YEAR OF THREE YEAR DEGREE COURSE.

	Max. Marks.	Min. Pass Marks.	Time
One Paper.	100	36	3 hours.

Syllabus—

Paper II—Political Theory—

1. Introduction—

(a) Nature, Scope and methods of Political Science—Relations with other Social Sciences.

- (b) Nature of the State—State as an association—State in terms of Sovereignty—State in terms of law—Characteristic of State.
- 2. Emergence of State.
 - (a) Theories of the origin of State—The Social Contract Theory—Hobbes, Locke and Rousseau.
 - (b) Historical Development of the Modern State—Emergence of Citizenship.
- 3. Basis of State.
 - Sovereignty—
 - The Monistic and Pluralistic Concepts of Sovereignty:—
 - Law—Its nature, sources and sanction—Law and Morality.
- 4. State and
 - (a) Society—The Absolutist view.
 - (b) Nation—Theory of National Self Determination.
 - (c) Religion—The Secular State.
 - (d) Economic Order—Capitalism and Socialism.
- 5. Justification and functions of the State—
 - Laissze-faire and the Collectivist views of the functions of State—Concept of Welfare State.
- 6. Political Concepts:—
 - (a) Rights—Theories of Rights.
 - Particular Rights—Right to resist the State—views of Green—Laski and Gindhi.
 - (b) Liberty—Meaning and kinds—Liberty and Authority—Liberty and Equality—Meaning and kinds of Equality.
- 7. Forms and institutions :-
 - (a) Classification of States—
 - Historical and contemporary types of State.
 - (b) Articulations of Governmental Powers.
 - 1. Separation of Powers.
 - 2. Checks and Balances.
 - 3. Central and Local Governments.
- 8. Constitution—Definition and its essential ingredients—classification of constitutions.

9. Forms of Government :—Dictatorship—Democracy—Definition—meaning, merits and demerits. Conditions for its successful working—Parliamentary—presidential—Unitary and Federal.

10. Party System:—Public Opinion—

Minority Representation—
Local Self Government—

Books recommended :

The same as on Page 29 of the present Syllabus of the Rajasthan University. Further additions recommended—

No. 12—Appadorai : Substance of Politics
(Both Hindi and English).

D. THIRD YEAR OF THE THREE YEAR DEGREE COURSE.

	Max. Marks.	Min. Pass Marks.	Time.
Paper III : Modern Constitutions— England, U. S. A., Switzerland & U.S.S.R.	100	72	3 hours.
Paper IV : Part I Modern Political Theories— Part II An outline study of International relations since 1920 to the present day.	100		3 hours.

Syllabus :

Paper III—Modern Constitutions—

England, U. S. A., Switzerland and U. S. S. R.

Books recommended :—

1. Munro : Governments of Europe—Latest Edition.
2. Ogg & Zink : Modern foreign Governments.
3. Ogg & Ray : American Government.
4. A. C. Kapoor : Govt. of U. S. S. R.
5. Rappard : The Government of Switzerland.
6. Ghosh : The Government of Switzerland.

Paper IV—Marks 100—Candidates will be required to answer atleast two questions from each part.

Paper IV—Part I—Modern Political Theories.

1. Individualism

2. Idealism
3. Utilitarianism
4. Socialism—Utopian & Scientific
5. Collectivism
6. Communism
7. Anarchism
8. Fascism
9. Pluralism
10. Gandhism.
11. Nationalism
12. Imperialism
13. Internationalism

Part II—

An outline study of International Relations since 1920 to the present day.

Books recommended :

1. Joad : Modern Political Theory.
2. Ganesh Prasad : राजनैतिक विचारधारायें.
3. O'akshot : Modern Political Doctrines.
4. चौधरी : अन्तराष्ट्रीय सम्बन्ध.
5. Somerville : Between the two wars.
6. Carr : International Relations since the Peace settlement (Hindi and English Version).
7. Friedman : Introduction to World Politics.

E. The existing syllabus will continue for the
B. A. Examination of 1961.

F The existing courses of Studies will continue for the
M.A. Examination 1960-61 with the following change.

Paper V & VI—Delete "One of the following groups.....
two papers" and substitute "Any two papers of
the following" Groups.

Group A.—

- (i) Public Administration with Special reference to England and India

Or

- (ii) Local Self Government in India, England, U. S. A. and the U. S. S. R.

Or

- (iii) 20th Century International Relations

Or

- (iv) Diplomacy—History 1815–1919 and Technique

Or

- (v) International Law and Organisation.

Or

- (vi) Contemporary Asia.

Group C—Would be known as Group B.

Group B:—

- (i) Principles of Sociology and Indian Social Institution

Or

- (ii) Social Psychology

Or

- (iii) Social Anthropology

Group D— Would be known as Group C.

D. Upadhyaya
Convener.

APPENDIX D

(Ref. Fac. of Arts Res. No. 19 of Nov. 5, 1958)

Minutes of a meeting of the Board of Studies in History & Archaeology held on Thursday the 8th May, 1958 and Friday the 9th May, 1958 at 12.30. p.m. at the University Office, Jaipur.

Present :

1. Dr. A. L. Srivastava
2. Dr. Satya Prakash Srivastava
3. Dr. G. N. Sharma
4. Dr. R. N. Chowdhuri
5. Shri B. B. Goyal
6. Dr. M. L. Sharma

(Convenor)

1. The Board recommended the following schemes, syllabuses and Text-books for Pre-University course, Three Year Degree Course, B. A. and M. A. Examinations of 1961 :—

(a) PRE-UNIVERSITY

	Max. Marks.	Min. Pass Marks.	Time
One Paper—	100	33	3 hours.

Syllabus—

There shall be one paper of three hours duration consisting of two Sections. Students will have to attempt at least two questions from each Section. In all five questions are to be attempted.

Section 'A' INDIAN HISTORY from Earliest Times to 1947 A. D. with special reference to :—

Buddha, Asoka, Mauryas, Guptas, Harsha, Turkish Invasions, Khilji Imperialism, Break-up of the Sultanate, Sher Shah's Administration, Akbar's Institutions, Shivaji, Aurangzeb, Downfall of the Mughal Empire, Expansion of the Marathas, British Conquest of India—Clive, Warren Hastings, Wellesley, Lord Hastings, and Dalhousie; Reform Movements in India—Constitutional Developments—Political Awakening.

Section 'B' WORLD HISTORY from 1780 to 1945.

Causes and Effects of the French Revolution—Napoleon—The Industrial Revolution in Europe—Congress of Vienna—Unification of Italy and Germany—The rise of Japan—The Founding of the Chinese

Republic—Causes and effects of the World War I—The Russian Revolution—The League of Nations—Fascism and Nazism—The Sino. Japanese War—Causes and Results of World War I —The Birth of U. N. O.

Note—The course in World History is expected to be covered in outline.

Books recommended :

1. H. A. Davies : An Outline History of the World (O.U.P.)
2. H. Webster : World History (Revised Edition) Health & Co., London.
3. K. M. Panikkar : Survey of Indian History (Asia Publishing House, Bombay)
4. Pyarelal Sharma : Vishwa Itihas Ki Roop Rekha
(Nand Kishore & Bros., Varanasi).
5. P. K. Majumdar : Vishwa Sabhyata Ka Itihas
(The Students' Book Company, Jaipur).
6. Ishwari Prasad : Bharat Ka Itihas (Indian Press, Allahabad).
7. Hari Shankar Sharma : Vishwa Ka Itihas
(Vidya Bhawan, Jaipur).

(b) FIRST YEAR OF THE THREE-YEAR DEGREE COURSE

	Max. Marks.	Min. Pass Marks.	Time
One Paper	100	36	3 hours.

Syllabus

There will be one paper : A period of Indian History

Either (a) India from the Earliest Times to 1206 A. D.

Or (b) India from 1206 to 1757 A. D.

(a) India from the Earliest Times to 1206 A. D.

Books recommended :

1. V. A. Smith : The Early History of India. (O. U. P)
2. R. C. Majumdar : Ancient India (Motilal Banarasidas, Varanasi).
3. R. C. Majumdar : Hindu Colonies in the Far East. (General Printers & Publishers, Calcutta).
4. R. D. Banerjee : Pre-Historic, Ancient & Hindu India, Part I. (Blackie & Sons, Calcutta).
5. R. S. Tripathi : Prachin Bharat Ka Itihas (Nand Kishore & Bros, Varanasi).

6. N. Ghosh : Bharat Ka Prachin Itihas (Indian Press Ltd., Allahabad).

(b) India from 1206 to 1757 A. D.

Note :—The period after 1707 A. D. will relate only to the downfall of the Mughal Empire.

Books recommended :

1. S. R. Sharma : Mughal Empire in 3 parts.
(Karnatic Publishing House, Bombay).
2. Ishwari Prasad : History of Mediaeval India
(Indian Press, Allahabad).
3. Ishwari Prasad : Muslim Rule in India Book II only
(Indian Press, Allahabad).
4. Sarkar & Datta : A text-book of Modern Indian History
Book I, Parts I to III. (Indian Press Ltd., Allahabad) (Hindi edition also available).
5. J. N. Sarkar : Mughal Administration
(M. C. Sarkar & Sons, Calcutta).
6. A. L. Srivastava : Sultanate of Delhi
(Shivalal Agarwal & Co., Agra).
7. A. L. Srivastava : Mughal Kalin Bharat
(Shivalal Agarwal & Co., Agra).
8. Green : An Atlas of Indian History.
9. A. B. Pandey : Purva Madhya Kalin Bharat Ka Itihas
(Gautam Bros, Kanpur).
10. A. B. Pandey : Uttar Madhya Kalin Bharat Ka Itihas
(Gautam Bros. Kanpur).

(c) SECOND YEAR OF THE THREE-YEAR DEGREE COURSE.

	Max. Marks.	Min. Pass Marks	Time
One Paper	100	36	3 hours.

Syllabus :

- Either (a) Modern India from 1757 to 1947 A. D.
Or (b) Outline History of China & Japan from 1850 to 1945.
(a) Modern India from 1757 to 1947 A. D.

Books recommended :

1. Sarkar & Dutta : A Text-Book of Modern Indian History
Vol. II. Parts I & II. (Indian Press, Allahabad).

2. Ishwari Prasad & Subedar : A History of Modern India from 1740 to 1950. (Indian Press, Allahabad).
3. Thompson & Garrett : Rise & Fulfilment of British Rule in India (O. U. P.).
4. R. C. Majumdar, H. C. Roychowdhury & K. K. Datta : An Advanced History of India, Part III. (Macmillan & Co., London).
5. P. E. Roberts : History of British India (O. U. P.).
6. Green : An Atlas of Indian History.
7. P. E. Roberts : British Kalin Bharat Ka Itihas.
(S. Chand & Co., Delhi).

(b) Outline History of China & Japan from 1850 to 1945.

Books recommended :

1. H. M. Vinacke : A History of the Far East in Modern Times. fourth edn. (F. S. Crofts & Co., New York).
2. Latourette : The History of the Far East
(McGraw Hill & Co., New York).
3. Paul Hibbert Clyde : The Far East (A History of the Impact of the West on Eastern Asia) 2nd edn. 1952.
(Prentice Hall, New York).
4. Chisohi Yanaga : Japan Since Perry
(McGraw Hill & Co., New York).
5. Latourette : The Development of China
(McGraw Hill & Co., New York).
6. K. M. Panikkar : Asia and Western Dominance
(Relevant portions) (G. Allen, Unwin & Co., London).
7. Satyaketu Vidyalkar : Asia Ka Adhunik Itihas
(Saraswati Sadan, Massouril).

(d) FINAL YEAR OF THE THREE-YEAR DEGREE COURSES.

		Max. Marks.	Min. Pass Marks.	Time.
Paper I	General History of Modern Europe 1815-1945	100	72	3 hours.
Paper II	Evolution of Indian Culture	100		3 hours.

Syllabus :

Paper I : General History of Modern Europe 1815-1945.

Books recommended :

1. C. D. Hazen & S. P. Varma : Modern European History
(S. Chand & Co., Delhi).
2. D. M. Ketslby : A History of Modern Times
(G. Harrap & Sons, London).
3. J. A. R. Marriott : A History of Europe from 1815 to 1939.
4. B. N. Mehta : Adhunik Europe, Parts II, III & IV.
(Lakshmi Narayan Agarwal, Agra).
5. S. Chowdhuri : आधुनिक यूरोप का इतिहास (रमेश बुक डिपो,
जयपुर)
6. Robertson & Bartholomew : Historical Atlas of Modern
Europe (1789-1939).
7. K. S. Lal : Adhunik Europe Ka Itihas
(Indian Press, Allahabad.)
8. H. A. L. Fisher : History of Europe.
9. Hayes : A Social and Cultural History of Europe, Vols. I & II.

Paper II : Evolution of Indian Culture.

This question-paper should be divided into three parts—Ancient, Mediaeval and Modern Periods—each marked as 'A', 'B' and 'C' respectively and not more than two questions should be attempted from any one section.

Books recommended :

1. K. M. Panikkar : A Survey of Indian History (Asia Publishing House, Bombay).
2. J. N. Sarkar : India through the Ages (M. C. Sarkar,
Calcutta).
3. C. E. M. Joad : The Story of Civilisation (A. C. Black,
London).
4. Datta, Roychowdhuri & Majumdar : Advanced History of
India. Relevant Portions (Macmillan & Co., London).
5. Satyaketu Vidyalkar : Bharatiya Sanskriti aur Ushka Itihas.
(In two parts) (Saraswati Sadan, Mussori).
6. M. L. Vidyarthi : India's Culture through the Ages. (Tape-
shwari Sahitya Mandir, Kanpur).
7. B. N. Lunia : Bharatiya Sabhyata Tatha Sanskriti Ka Vikash.
(Lakshmi Narain Agarwal & Sons, Agra).

(E) B. A. EXAMINATION OF 1961.

No change.

(F) M. A. (PREVIOUS AND FINAL) EXAMINATION OF 1951

There will be eight papers including one on Essay. The Essay must be taken in the Final Examination. Only such regular students as secure above 50% marks in the M. A. Previous Examination may offer a thesis in lieu of Essay and any other paper chosen by the student. For those who offer thesis there would be a *viva-voce* examination which will carry 50 marks and the thesis will carry 150 marks. The thesis should cover 150 typed foolscap pages and should be written under the supervision of Post-graduate teacher. Of the rest papers, any four may be taken in the Previous and the remaining in the Final.

Paper I : The World Between the Two World Wars.

(No special emphasis on the detailed internal history of any country).

Books recommended :

No change.

Paper II : Contemporary Europe from 1878 to 1945 :

(One question on British Foreign Policy or, on Constitutional reforms or, on Britain's attempt to become a welfare State should be compulsory).

(Add) *Books recommended :*

1. J. A. R. Marriott : Modern England, 1885-1945
(Methuen & Co., London).
2. R. C. K. Ensor : England from 1870 to 1914 A. D. (O. U. P.)
3. C. L. Mowat : Britain Between the Wars, 1918-1940.
(University of Chicago, 1955).
4. V. L. Albjerg and H. M. Albjerg : Europe from 1914 to the Present. (McGraw Hill, New York).
5. F. P. Chambers, C. H. Harris and C. C. Bayley : This Age of Conflict. Revised Edition. (G. Harrap, London).

**Paper III : Either A Selected Period of English History, 1870-1939
Or Contemporary Asia, 1850-1950.
(China, Japan, Iran and the Arab World).**

***Books recommended :* A Selected Period of British History. No change.
Contemporary Asia**

1. Claude A. Buss : The Far East. (Macmillan, 1955).
2. H. F. Macnair and D. F. Lach : Modern For Eastern International Relations (D. Van Nostrand, New York, 2nd Edn. 1955).
3. P. H. Clyde : The Far East. Second Edition, 1952.

4. H. M. Vinacke : A History of the Far East in Modern Times.
Rev. Edn.
5. George Lenczowski : The Middle East in World Affairs
2nd edn. (Cornell University Press, Ithaca, New York).
6. George Lenczowski : Russia and the West in Iran, 1918-49.
(Cornell University Press, Ithaca, New York).
7. Chitsohi Yanaga : Japan Since Perry
(McGraw Hill, New York).
8. K. M. Panikkar : Asia and the Western Dominance.
(G. Allen, London).
9. Latourette : The Development of China
(McGraw Hill, New York).
10. G. Kirk : A Short History of Middle East. (London, 1952).
11. Antonius, George : The Arab Awakening. (London, 1945).

Paper IV and V :—

- Group 'A' : Ancient India.
Group 'B' : Mediaeval India.
Group 'C' : Modern India.

Note :—Candidates should offer either the first two or the last two papers.

Group 'A' :

- (a) Earliest Times to 320 B. C.
- (b) From 320 B. C. to 320 A. D.
- (c) From 320 A. D. to 700 A. D.

(a) From Earliest Times to 320 A. D.

Books recommended :

1. Ragozin : Vedic India.
2. Mackay : Indus Valley Civilization.
3. R. K. Mookerjee : Hindu Civilization, 3rd Edn.
4. Cambridge History of India, Vol. I.
5. A. D. Pusalkar and R. C. Majumdar : Vedic India.
6. A. C. Das : Rigvedic Culture.
7. Rahu iSankritayan : Buddha Charya.
8. Kern : Buddhism.
9. Rhys Davies : Buddhism.

10. P. L. Bhargava : The Aryan Expansion.
(Upper India Publishing House, Lucknow).

(h) From 320 B. C. to 320 A. D.

Books recommended :

No change.

(c) From 320 A. D. to 700 A. D.

Books recommended :

No change.

Group 'B' :

- (a) From 700 A. D. to 1206 A. D.
- (b) From 1206 A. D. to 1526 A. D.
- (c) From 1526 A. D. to 1627 A. D.
- (d) From 1627 A. D. to 1761 A. D.

*Note :—*Candidates should offer either (a) & (b) or (c) & (d).

Books recommended :

No change.

Group 'C' :

- (a) India under the E. I. Co. from Clive to Wellesley.
- (b) India under the E. I. Co. from Wellesley to Dalhousie.
- (c) India under the Crown with special reference to the Constitutional Development.

Books recommended :

No change.

Paper VI : The History of the Marathas & Their Institutions
(1627-1761).

Books recommended :

No change.

Paper VII : History of Rajasthan, 1526-1707 (With special reference to Jaipur, Jodhpur, Bundi, Kotah, Udaipur and Bikaner).

Paper VIII : Essay or Thesis.

Ref. : (For Thesis) : Kate L. Turabian : A Manual for writers of dissertations. (Chicago University Press, 1954).

2. Under Section 34 (4) (iv) of the University Act the Board elected Dr. G. N. Sharma, M. B. College, Udaipur, to serve on the Committee for Selection of examiners in History and Archaeology.

3. The Board considered the office note (*vide Appendix*) and is unanimously of the opinion that the recommendation of this Board can be commented upon, accepted or rejected by the Faculty of Arts, the Academic Council or the Syndicate and not by the University Office. This Board has carefully considered the replies of the Convener and endorses them in toto.

4. With reference to the Faculty of Arts Resolution No. 7 dated 19th December 1957 asking this Board to consider and express views on the following recommendation of the Board of Studies in Economics as contained in its Resolution No. 6 of September 2, 1957, the Board agreed in principle with the suggestions contained in the Board's recommendation and recommended that the period of such a course should be reduced to three months.

"The Board recommended that the University should introduce a course in Research Methods and Techniques in the University Department of Economics, Jaipur, and enable those teachers in Economics in affiliated colleges who have put in at least five years service to spend a year in the department while receiving their full salary".

5. The Board requested the Convener to take early steps to implement its following recommendation No. 4 of the meeting of the Board held on 5th September, 1957.

Regarding the introduction of a degree or a diploma course in Archaeology as suggested in Resolution No. 4, dated 23rd January, 1957, of the Faculty of Arts, the Board expressed the desirability of setting up a Committee of the following three members to consider the above resolution and to submit its suggestions direct to the Vice-Chancellor, unless it be considered desirable to convene another meeting of the Board :—

1. Dr. G. N. Sharma
2. Dr. Satya Prakash
3. Dr. M. L. Sharma

(Convener).

6. The Board revised the panel of examiners for 1958-59.

7. The Board had no comments to offer on the question papers of 1958.

M. L. Sharma
Convener.

Appendix

(Ref. Board of Studies in History Res. No. 3. of May 8 & 9, 1958)

Statement of points raised by the University Office together with the replies of the Convener of the Board of Studies in History and Archaeology and Office suggestions thereto.

Points raised	Dr. Sharma's replies	Office suggestions.
1.	2.	3.
1. Who will approve the subject of the- sis ?	Prof. of the College where the student is studying.	All right.
2. Whether there would be any supervisor to guide the candidate ?	Yes, the Professor.	All right.
3. Whether private candidates shall be allowed to offer thesis papers ?	No.	All right.
4. What procedure would be adopted for appointing examiner, whether there would an internal examiner also ?	The University will appoint the examiners as for the Ph. D. There should be two examiners. 1) the guiding prof. 2) 1 external examiner	*The procedure should be the same as for M.A. Economics Survey, excluding viva-voce.
5. What will be the criteria for awarding marks on the thesis ?	M. A. standard.	All right.
6. Whether there would be any viva-voce test, if so who will conduct it ?	No.	All right.
7. At what rate payment will be made to the examiner(s) ?	Will be decided by the Vice-Chancellor. I would suggest Rs. 20/- for each examiner.	*It should be at the rate of Rs. 15/- per thesis as in the case of M. A. Economics.

*In the case of Paper VII Economic Survey (for M. A. Final Economics only) there are two examiners, one internal who is the guiding professor and the other external appointed by the Selection Committee for Examiners in Economics.

BPPENDIX E 1

(Ref. Fac. of Arts Res. Nos. 10 & 19 of Nov. 5, 1958).

Minutes of meetings of the Board of Studies in Economics held on Tuesday and Wednesday the 6th and 7th May 1958, respectively, at 12.30 p.m. in the University Department of Economics, Jaipur.

Present :

1. Dr. R. P. Singh
2. Principal (Miss) R. Padmini
3. Principal S. S. Saxena (only on the 6th)
4. Prof. S. D. Derashri
5. Dr. D. L. Gupta (by special invitation for part of the proceedings).
6. Prof. M. V. Mathur
(*Convener*)

1. The Board recommended courses of study in Economics for the following examinations (vide appendices) :

- (a) Pre—University Course Examination 1960 (*Appendix I*).
- (b) 1st year examination of the three-year degree course 1959 and 1960. (*Appendix II*).
- (c) 2nd year examination of the three-year degree course 1960 and 1961. (*Appendix III*).
- (d) Final year examination of the three-year degree course 1961 and 1962. (*Appendix IV*).

The three-year degree course in Economics will consist of four papers of 100 marks each divided as follows :

Paper I—Economic Development of U. K., U. S., S. R. and India
(First Year).

Paper II—Principles of Economic Analysis (Second year).

Paper III—Money, Banking and Public Finance (Third year).

Paper IV—Indian Economic Conditions (Third year).

The Board further recommended that the following number of lecture periods (and tutorials, if any) per week should be prescribed :—

Pre—University Course ... 6 periods per week

First Year of the Three-Year

Degree Course ... 6 periods per week.

Second Year of the Three-Year

Degree Course ... 6 " "

Third Year of the Three-Year

Degree Course (Two papers) ... 6 " "

(It may be noted that at present also for *three* papers of the two-year B. A. course, the University prescribes $9+9=18$ periods; in the Three-Year Degree Course the number of periods will become $6+6+9=21$ for *four* papers. Each period is taken to be of 45 minutes duration as before).

2. The Board recommended that the courses for the B. Sc. Examination in Economics be as far as possible the same as those for B. A. Economics. Certain alternatives were discussed to adjust the Arts set up in Economics (Three examinations and an aggregate of 400 marks) with the Science set-up of 2 examinations and aggregate marks of 450. Finally, the Convener was authorised to discuss this matter with the Convener of the Board of Studies in Mathematics and, if possible, with the Convener of the Board of Studies in Geography also and then to make his final recommendations on behalf of the Board.

3. The Board postponed consideration of B. A. and M. A. Previous & Final Examinations of 1961; the next meeting of the Board may be convened before the next meeting of the Faculty of Arts (it is expected that the external members will find it convenient to come to Jaipur after July and help us in drafting the revised M. A. courses).

4. Under Section 34 (4) (iv) of the University Act, the Board elected Dr. R. P. Singh to serve on the Committee for selection of examiners in Economics.

5. The Board revised the panel of examiners for 1958-59.

6. The Board went through the question papers set for the examinations of 1958 and offered the following comments :—

B. A. Paper I—There appears to be some misprints in the Hindi translation of questions 7 and 8—e. g.,

Q. 7. दीर्घकालीन for probably दीर्घकालीन

Q. 8. सहायक for probably सहायक

M. A.—Principles of Economics.

The paper does not appear to be a balanced one. There is too much emphasis on the theory of employment and too little on the theory of value.

M. A.-Labour Economics-Paper I.

Questions 7 and 8 relate to individual countries (Burma and Ceylon) but in our syllabus we include S. E. Asia in general only.

7. The Board recommended the names for evaluation of Ph.D. thesis on 'Wealth and Welfare of former Kotah State'.

8. The Board considered letter No. 6273/58 dated the 25th April, 1958 from the Director of Economics and Statistics, Government of Rajasthan, regarding inclusion of certain publications among books recommended and *resolved that* the Director be requested to supply copies of these publications to the members of this Board of Studies so that they may go through them and express their opinion regarding their suitability when the Board meets next for drawing up syllabi for M. A. Examination in Economics.

9. The Board considered a letter No. F. 36-5/58 (H) dated 14th March 1958 from the Secretary, University Grants Commission, New Delhi, regarding introduction of 'Forest Economy and Tribal Welfare' or any aspect of it in the syllabus of post-graduate studies.

Resolved to recommend that Tribal Welfare and Forest Economics be not included as an independent paper in M. A. (Econ.). However, students of 'Economic Survey' may carry out surveys regarding 'Forest Economics' as and when feasible.

M. V. Mathur
Convener.

Appendix I

(*Ref. B. O. S. in Economics Res. No. 1 (a) of May 6 & 7, 1958*).

Pre-University Examination 1960-Economics.

One paper of 100 marks—Elements of Economics.

Introduction: Subject matter of Economics—its relation to other sciences—Divisions of Economics. Importance of the study of Economics. Development of Economic life. Some basic terms: Utility, Wealth, Value, Price, Income, Capital.

Consumption: Wants and their satisfaction. Classification of wants into necessities, comforts and luxuries. Law of diminishing marginal utility. Law of equimarginal utility. Elasticity of demand. The concept of consumer's surplus. Family Budgets. Engle's law of consumption. Standard of living, spending, saving and hoarding; social effects of spending. Economic waste and destruction.

Production: Meaning and importance. Factors of Production. Laws of Production.

Land: Meaning and characteristics. Its part in production. Factors affecting its productivity.

Labour: Peculiarities of labour. Malthusian theory of population. Optimum population. Factors affecting efficiency of labour.

Capital: Factors affecting its supply. Machinery—its advantages and disadvantages.

Organisation: Division of labour. Localisation of industry. Large and small scale of production.

Enterprise: Decisions of an entrepreneur. Forms of entrepreneurship.

Exchange: Barter, Gains of exchange. Market. Extent of Market. Laws of demand and supply. Theory of value.

Money: Definition. Functions. Kinds of money. Coins and coinage. Paper money. An elementary treatment of value of money Gold standard, and Bimetallism. Gresham's Law.

Credit: Cheques, hundies and bills of exchange. Banks and their functions.

Distribution: The problem of distribution.

Rent: Meaning. Ricardo's theory of rent. Factors affecting rent.

Wages : Nominal and real wages. Time and piece wages. Determination of wages. Standard of living and wages. Trade Unions.

Interest : The nature of interest. Gross and net interest. Determination of interest.

Profit : Gross and net profit. Profit as remuneration for risk.

Public Finance : Sources of public revenue. Canons of taxation. Direct and indirect taxes. Kinds of public expenditure.

Note : Suitable illustrations from Indian conditions should be given.

Books recommended :

1. Jathar and Beri : Elements of Economics (English and Hindi editions).
2. Arthashastra by M. D. Joshi and Sharma (Upper India Publishing House, Lucknow).
3. Prarambhik Arthashastra by S. S. Saxena.
4. Arthashastra ki Saral Rooprekha by S. D. Derasri.

Journals :

At least the following journals should be subscribed :

1. Indian Economic Journal—Quarterly—Bombay.
2. Economic Journal—Quarterly—London.
3. Commerce—Weekly—Bombay.

Appendix II

(Ref. B. O. S. in Economics Res. No. 1 (b) of May 6 & 7 1958)

Three Year Degree Course-Economics

First Year Examination of the Three-Year Degree Course, 1959 and 1960.

Economics-Paper I—

Economic Development of U. K., U. S. S. R. and India-100 marks.

Economic Development of—

- i) U. K.—(From Industrial Revolution to 1939 and salient features of British Economic Development since 1939)—Economic conditions in Great Britain on the eve of the Industrial Revolution—The Industrial Revolution—Developments in major industries, agriculture and transport—Working class movement—Growth of Social security—Laissez-faire, its prevalence and decline—Development of Banking and Finance.
- ii) U. S. S. R. —Significance of the study of Soviet economic development—Russia on the eve of the 1917 Revolution—New Economic policy—Agrarian and industrial situation on the eve of the first five year plan—Soviet five-year plans—Lessons of the Russian experiment.
- iii) India—(From the beginning of the 19th century to 1939)—Physical and social environment—Economic situation in India in the beginning of the 19th century—Decline of cottage industries. Developments in agriculture, industries, transport, banking, currency, labour legislation and tariff policy.

Books recommended :

1. Southgate—English Economic History (English as well as Hindi editions).
2. Morris Dobb : Soviet Economic Development since 1917.
3. D. R. Gadgil : Industrial Evolution of India.

Journals :

At least the following journals should be subscribed for the Three-Year Degree Course in Economics—

1. Indian Economic Journal—Quarterly—Bombay.
2. Economic Journal—Quarterly—Bombay.

3. American Economic Review-Quarterly-U. S. A.
4. Commerce-Weekly-Bombay.
5. Reserve Bank Bulletin-Monthly-Bombay.
6. Journal of Trade and Industry-Monthly-Government of India Publication, New Delhi.

Appendix III

(*Ref. B. O. S. in Economics Res. No. 1 (c) of May 6 & 7, 1958*)

Second Year Examination of the Three Year Degree Course.

Economics Paper II—Principles of Economic Analysis—100 marks.

1. Introductory—Subject matter of Economics, Economics as a science and as an art.

Methods—Deductive and inductive.

Nature of Economic laws.

2. Utility—Law of diminishing utility. Law of equi-marginal utility. Consumer's surplus. Indifference curves; nature and importance; derivation of demand curve. Law of Demand.

3. Production—The factors of production—their supply and efficiency. Theories of Population.

National Income—its concept, components and measurement. National income and social welfare.

The laws of production—Combination of factors of production. The law of substitution. The laws of returns. Industrial organisation. Joint stock enterprise. Business combinations. Public Enterprise.

4. Economic Systems—Capitalism—Socialism—Co-operation—Planned economy—Sarvodaya.

5. Exchange Market—market mechanism

Value under perfect competition, imperfect competition and monopoly. Importance of time element; influence of laws of returns on determination of value; Joint demand and Supply.

Monopoly—Concept of marginal revenue and monopoly equilibrium; discriminating monopoly. Control of monopoly. Speculation—Dealings in future. Relation between present and future prices. The Stock Exchange; investors, jobbers, bulls and bears. Effects of speculation in steadying prices.

6. Distribution—Theory of marginal productivity. Mobility of the factors of production.

(i) Rent—Ricardo's theory of rent Relation between rent and price. Rent as return for a specific factor.

(ii) Wages—Peculiarities of labour as an agent of production and their influence on wages. Marginal productivity theory.

Factors affecting wages. Trade Unions and their effect on wages.

- (iii) Interest—Gross and net interest. Determination of interest in relation to waiting; time-preference and liquidity preference. Loanable funds theory of interest.
- (iv) Profits—Gross and net profits. Determination of profits in relation to risk and uncertainty. Surplus profits and rent. Profits and price.

Books recommended :—

1. Meyers : Elements of Modern Economics.
2. Benham : Economics (English and Hindi editions).
3. Hicks : Social Frame-work.
4. Paul Samuelson : Economics.
5. J. K. Mehta and others : Fundamentals of Economics (English and Hindi editions).

Appendix IV

(Ref. B. O. S. in Economics Res. No. 1 (d) of May 6 & 7, 1958)

Third Year of the Three Year Degree Course (B. A. & B. Sc)

Two papers of 100 marks each.

Paper III—Money, Banking and Public Finance—100 marks.

1. Money—Definition, functions and forms of money. Importance of money. Value of money measurement. Index numbers, construction, importance and limitations. Consequences of changes in the value of money. Determination of the value of money—quantity theory (Fisherian Version). Demand for and supply of money Monetary standards.

2. Banking—Functions—Credit creation by banks. Basic principles of commercial banking. Bank's balance-sheet. Clearing House System: Central banks—functions. Monetary Management.

3. International Trade—Difference from internal trade. Mobility of factors of production. Law of comparative costs. Advantages and disadvantages of International trade. International value; limits of variation fixed by the difference in comparative costs. Favourable and adverse balance of trade, equation of indebtedness; meaning; factors affecting it.

Free trade and protection—Meaning of each; arguments for and against. Countervailing duties. Principles of reciprocity, retaliation and preference.

4. Foreign exchange—Meaning. Determination of exchange rate: Mint par theory, purchasing power parity theory, and the balance of payments theory; correctives to exchange rate. Exchange control—objects and methods.

Functions of I. M. F. and World Bank.

5. Public Finance—Public expenditure and functions of Government. Theory of maximum social advantage. Brief summary of the sources of State income. Public debt.

Taxation—Definition and characteristics of a tax. The tax system. Canons of taxation. Incidence and shifting of taxes. Taxes and monopolies.

6. Elementary treatment of the theory of employment—changes in levels of economic activity—Monetary management and Fiscal policy.

Books recommended :

The following books are recommended in addition to those recommended under paper II :

1. Crowther : Outline of Money (English and Hindi editions).
2. R. S. Sayers : Modern Banking.
3. Dalton : Public Finance.

Paper IV—Indian Economic Conditions—100 marks.

1. Basic features of Indian economy—Natural and human resources—Population problems of India—National income of India—its components and variations.
2. Rural Economics—
 - (i) Indian Agriculture—Importance, characteristics and causes of low yield. Irrigation facilities—Factors affecting agricultural improvement in India.
 - (ii) Problems of land holdings—Evils, sub-division, fragmentation, Consolidation and ceilings.
 - (iii) Land ownership and management—Main features of recent land reforms in India and Rajasthan—Types of Farming—peasant proprietorship, collective and cooperative.
 - (iv) Rural Finance—Sources of supply—Rural indebtedness—Volume, causes and remedial measures.
 - (v) Agricultural marketing in India.
 - (vi) Cooperation and agricultural development—recommendations of Rural Credit Survey Committee report.
3. Industries :
 - (i) Village and cottage industries—their difficulties and methods of aid.
 - (ii) Large-scale organised industries—Their place in Indian economy; causes of slow and unsatisfactory industrial development.
 - (iii) Industrial Finance—Sources of finance for small scale and large scale industries. Deficiencies of industrial finance in India and suggestions for improvement.
 - (iv) Industrial Labour—working conditions in factories. Industrial wages and standard of living. Causes and remedies of unemployment. Brief survey of trade unions in India.

(v) India's industrial policy.

4. Transport system—Importance—Main divisions.

(i) Railways (ii) Roads (iii) Waterways (iv) Air Transport.

Their development, present position and possibilities for future development.

5. Indian Banking—developments since 1939.

6. Indian Currency—developments since 1939.

7. India's Foreign Trade—Principal features; important items of foreign trade and important countries for exports and imports. Survey of trade agreements.

8. Indian Tariff policy since 1939. The second Fiscal Commission—present position.

9. Indian Public Finance—Distribution of sources of revenues between Union and States—Main sources of Union, State and Local revenues—pattern of public expenditure and public debt.

10. Economic Planning in India—The National Planning Commission. Five-Year plans—a critical study.

Books—recommended :

1. Wadia and Merchant : Our Economic Problem.
2. S. S. Saxena & P. N. Mathur : भारतीय अर्थशास्त्र की रूप-रेखा—Vols. I & II.
3. P. N. Banerjee : Indian Economics.
4. The Second Five Year Plan of India (Government of India publication.)
5. India—Annual Reference Manual—Latest (Publications Division, Government of India).
6. A. B. Das and M. N. Chatterji : The Indian Economy—its growth and problems.
7. Alak Ghosh : Indian Economy—its nature and problems.

APPENDIX E 2

(Ref. Fac. of Arts Res. No. 19 of Nov. 5, 1958)

Minutes of meetings of the Board of Studies in Economics held on the 9th & 10th September 1958 at the University Buildings, Jaipur.

Present :

1. Principal (Miss) R. Padmini
2. Dr. R. P. Singh
3. Prof. S. D. Derashri
4. Prof. M. V. Mathur

(Convener)

On 10th September only.

- | | |
|----------------------|------------------|
| 1. Dr. D. L. Gupta | } By Invitation. |
| 2. Shri D. D. Narula | |
| 3. Shri J. M. Joshi | |
| 4. Shri G. S. Bhalla | |

1. The Board recommended that the courses of study for M. A. Previous (Economics) Examination for 1960 and M. A. Previous and Final (Economics) Examinations of 1961 be as given in the *appendix*.

2. The Board recommended that the courses of study in Economics for the B.A. Examination of 1961 be the same as those for B.A. Examination of 1960.

3. The Board considered Profesor M. V. Mathur's letter No. 83/CR-7 dated the 11th February, 1958 (which had been included in the agenda by the University Office) and noted that it referred to factual corrections of draft minutes of the Faculty of Arts held on the 19th December, 1957.

4. The Board considered letter No. 6273/58 dated the 25th April, 1958 from the Director of Economics and Statistics, Government of Rajasthan, Jaipur, and recommended that the available publications of the Directorate be included under 'Books recommended' for appropriate papers in M. A. (Economics).

5. The Board scrutinised the statements of qualifications & experience of teachers and recommended names for inclusion in the Panel of Examiners.

M. V. Mathur
Convener.

Appendix

(*Ref. B.O.S. in Economics Res. No. 1 of Sept. 9 & 10, 1953*)

Courses of study for M.A. Previous (Economics Examination of 1960 and M. A. Previous and Final Examinations of 1961.

COMPULSORY PAPERS

1. History of Economic Thought.

No change except for the following in the 'books recommended':

Delete :

1. Cannan : Review of Economic Theory.
2. Whittaker : History of Economic Ideas.
3. Gray : The Socialist Tradition.
4. Laidler : Socio—Economic Movements.

Add :

1. Schumpeter : History of Economic Analysis
(for reference).
2. Bell : History of Economic Thought.
3. Newman : History of Economic Thought.
4. Spiegel : History of Economic Thought.

2. Principles of Economics :

No change.

3. Money and Banking :

No change, except adding the following amongst 'Books recommended' :

1. Day : Monetary Economics.
2. Halm : Money and Banking.

4. Public Finance :

No change.

5. Theory of Economic Growth and Economic Planning in India :

I. Theory of Economic Growth :—40 Marks.

Analysis of Economic growth—determinants of economic growth—the role of natural and human resources, Capital formation, economic institutions, and government in economic growth—problems of economic growth in under developed countries.

II. Economic Planning in India :—

60 Marks.

Concept of economic planning.

Types of economic planning.

Methods and techniques of planning.

Economic planning in India before the First Five

Year Plan.

The National Planning Commission.

The First Five Year Plan—A review.

A detailed study of the Second Five Year Plan.

Community Development and N. E. S. Economic

Planning in Rajasthan.

Books recommended :

1. W.A. Lewis : The Theory of Economic Growth (Allen & Unwin)
2. P. T. Bauer and B.B. S. Yamey : The Economics of Under-developed countries (Nisbet-Cambridge).
3. P. T. Bauer : Economic Analysis and Policy in Under-developed countries (Cambridge).
4. W. A. Lewis : Principles of Economic Planning.
5. U. N. : Measures for Economic Development in Under-developed countries.
6. U. N. (ECAFE) : Problems and Techniques of Planning (Nov' 55 Bulletin).
7. G. M. Meier and R. E. Baldurin : Economic Development Theory, History and Policy (Wiley) (For reference).
8. Publications of the Planning Commission : Government of India: Five Year Plans and their progress reports and reviews.
9. Reports of the Programme Evaluation Planning Commission, Government of India.
10. Rajasthan Government : Second Five Year Plan.
11. Publications of the Directorate of Economic and Statistics Govt. of Rajasthan : Appraisals and Progress reports of the Five Year Plans in Rajasthan.

6. Elements of Statistics—including the sources of Indian economic data.

Meaning, Nature & scope of Statistics. Relation of statistics with other sciences. Uses of statistics. Statistic & Planning. Limiting of Statistics.

Collection, Presentation, Analysis & Interpretation of economic data.

Conducting and organising an economic survey.

Methods of sampling.

Diagrammatic & Graphic presentation of data.

Measures of Central Tendency, Dispersion, Skewness.

Construction and Uses of various types of Index Numbers.

Simple correlation. Interpolation of Graphic Newtonian (equal) and language.

Simple Association of Attributes.

Analysis of Time—series.

Economic Forecasting.

Interpretation of data.

INDIAN STATISTICS

Availability of statistical data in India—Sources & their reliability.

Statistical Organisations in India at the Centre and State levels.

N. S. S.

A critical study of the sources and methods of compiling data relating to the following in India—

1. Agriculture —Area, Yield and Agricultural Prices. Live-stock Census.
2. Industry —Census of Manufacture.
3. Population
4. Index Numbers—Wholesale and Cost of Living Index numbers.

Various Methods of Computing National Income with particular reference to India.

Important statistical Publications in India.

Official Statistics in Rajasthan.

Books Recommended :

1. Croxton & Cowden : Applied General statistics.
2. Mills : Statistics—Methods applied to Economics and Business.

3. Ghosh & Choudhary : Statistics.
4. Neiszwenger : Elementary Statistical Methods.
5. Guide to Current official Statistics (Govt. of India) Vols. I, II and III.
6. Ghosh & Elhance : Indian Statistics.
7. National Income Committee Reports (India)
8. Government of India, Ministry of Agriculture : Coordination of Agricultural Statistics.
9. National Sample Survey Reports
10. Guide to Current Agricultural Statistics : Manager, Govt. Publications.
11. Publications of the Directorate of Economics and Statistics—Rajasthan :
Basic Statistics (Latest)
Quarterly Bulletin of Economics and Statistics
Annual report of Directorate.
12. Census of Manufacturers, Govt. of India (Chap. I
13. Population Census Report I-A—Govt. of India.
Viva Voce—100 marks.

To be conducted after completion of written papers for the M. A. Final Examination: out of 100 marks for viva-voce, 80 marks should be equally assigned for oral questions concerning the eight compulsory and optional papers offered by the students and 20 marks for other questions at the discretion of examiners. The viva-voce Board should consist of two persons—the external examiner and the Head of the Department concerned for each examinee.

OPTIONAL PAPERS

One of the following groups (consisting of two papers carrying 100 marks each) to be taken; both the papers could be offered either in one year or one paper in Previous and the other in Final; Economic Survey can be offered in the Final examination only.

Group A—Economic History

Paper I—Economic History of India (from the earliest times to present day)

Paper II—Modern Economic Development of Great Powers.

No change.

Group B—Agricultural Economics

**Paper I—Principles of Agricultural Economics and
Agricultural Developments in India & Abroad**

**Paper II—Principles of Cooperation and Cooperative
Developments in India and Abroad.**

Agricultural Economics—Paper I.

**Principles of Agricultural Economics and Agricultural
Developments in India and Abroad.**

Nature and scope of Agricultural Economics. Combination of factors of production in agriculture. Laws of returns in agriculture. Scale and intensity of production system of farming.

Agricultural prices and problems of agricultural price stabilisation.

Theory of rent. Principles of land tenure. Taxation of agricultural incomes.

Wages.

State intervention in Agriculture.

World agriculture. Salient features of agricultural economics of U. S. A., U. K., U. S. S. R., China and Japan.

Indian Agriculture :

Chief characteristics of India's rural economy. Agricultural regions.

Problems of Land in India. Soils—soil conservation. Manures. Rotation of crops—crop planning. Sub-division and fragmentation of land holdings. Economic and optimum holdings.

Agricultural organisation and production. Problems of seeds, implements and methods of cultivation. Problems of agricultural labour with special reference to landless labour. Possibility of large-scale farming and mechanised agriculture in India, Water Supply. Irrigation. Dry farming.

Agricultural finance—money-lenders—cooperative societies, land mortgage banks; rural indebtedness.

Marketing of agricultural produce.

Rural Transport.

Cattle improvement in India.

Crop Insurance.

Village Industries.

Land reforms in India.

The State in relation to agricultural planning in India.

Agricultural problems of Rajasthan.

or

Rural Economy of Rajasthan.

Books on Paper I:

1. Cohen : Economics of Agriculture.
2. Edgar Thomas : An Introduction to Agricultural Economics.
3. Harold G. Helcrow (Ed.) : Contemporary Readings in Agricultural Economics.
4. Indian Society of Agricultural Economics : Readings in Agricultural Economics.
5. Schutiz : Production and Welfare of Agriculture.
6. O. B. Jesness (Ed.) : Readings in Agricultural Policy.
7. Annual Proceedings of the International Conference of Agricultural Economists. (Oxford University Press).
8. U. N. : Land Reform-Defects in Agrarian Structure as obstacles to Economic Development.
 F. A. O. : Agriculture in the World Economy, 1957.
 U. N. O. : Economic Survey of Europe (Annual).
 EXAFE : Economic survey of Asia & the Far East. (Annual).
9. W. S. Woyhoisky & } , World Population Production-Trends
 G. S. Woyhoisky } & Outlook. (Relevant parts only).
10. Solommon Adler : The Chinese Economy.
11. Govt. of India : Report of the Indian Delegation to China on Agricultural Planning & Techniques, 1955.
12. Naum Jasny : The Socialised Agriculture of the U. S. S. R. (1949).
13. Harry Schwartz : Russia's Soviet Economy, New York 1957.
14. Alexander Bayker : The Development of the Soviet Economic System, 1950.
15. Narayanswamy and Narasimhan : Economics of Indian Agriculture, Parts I and II.
16. S. T. Thirumalai : Post-War Agricultural Problems and Policies in India, 1954.

17. Driver : Problems of Zamindari and Land Tenure Reconstruction in India.
18. Report of the Famine Enquiry Commission, 1945.
19. Rural Banking Enquiry Committee Report, 1950.
20. Report of the Royal Commission on Agriculture in India, 1929.
21. Howard : Crop Production in India.
22. Journal of the Indian Society of Agricultural Economics.
23. Agricultural Situation in India.
24. H. D. Malviya : Land Reforms in India.
25. Govt. of India : Agricultural Legislation in India (7 volumes).
26. Report of the Congress Agrarian Reforms Committee.
27. C. B. Marmora : Indian Agriculture, 2nd edition (1958).

Agricultural Economics-Paper II

Principles of Cooperation and Cooperative Developments in India and Abroad.

Prophets of the Co-operative India-the philosophy of co-operation.

Principles of co-operation and their application in production, credit, marketing and distribution.

Salient features of the Cooperative Movement in U. K., U. S. A., Germany, Italy, Sweden, Denmark, China and Japan.

Cooperative movement in India-Evolution. Present position in relation to credit, Production, Marketing and distribution in Agriculture and Industry.

The rate of cooperation in Economic Planning and Development in India. The State and cooperative movement in India.

Co-operative movement in Rajasthan.

Books recommended on Paper II :

1. Calvert : Principles and Practice of Cooperation.
2. I. L. O. : Introduction to Cooperative Practice.
Cooperative Movement and Present day problems.
Developments of the Cooperative Movement in Asia.
3. C. R. Fay : Cooperation at Home and Abroad (2 vols.)
4. G. M. Hough : Cooperative Movement in India.
5. G. M. Land : Cooperative Banking in India.
6. N. R. Kulkarni : Theory & Practice of Cooperation in India
and Abroad (3 vols.)

7. Reserve Bank of India : Review of the Copperative Movement in India, All India Rural Credit Survey Committee Report.
Other Publications.
8. Government of India : Report of Co-operative Planning Committee the Saraiya Committee) 1945.
Report of Indian Delegation to China or Agrarian Cooperatives.
9. Planning Commission : Studies in Cooperative Farming.
(Programme Evaluation Organisation).
10. Indian Cooperative Review.
11. Yearbook of Agricultural Cooperation. (Florace Plankett Foundation).
12. James Peter Warbasse : Co-operative Democracy, 1947.
13. Paul Hubert Casselman : The Co-operative Movement and some of its Problems.
1952 New York.
14. Andrew J. Kress : Introduction to the Cooperative Movement, London, 1941.
15. F. Hell and W. P. Watkins : Co-operation Manchester, 1937

C. Industrial Economics :

Paper I. Economics of Modern Industry.

Paper II. Indian Industries & their problems.

(No change

D. Labour Economics :

Paper I. Industrial Relations.

Paper II. Wage Policy and Social Security.

(No Change).

E. International Economics :

Paper I. International Trade and Tariffs.

Para I of old paper I.

Para IV of old paper I.

Para I of old paper II.

Para V of old paper II.

Paper II. Foreign Exchange and International Economic Cooperation.

Para II of old paper I.

Para III of old paper I.

Paras II, III & IV of old paper II.

Para V of old paper I.

Para VI of old paper II.

Books recommended for Papers I & II

No change.

IV. Labour Economics.

Paper I—Industrial Relations.

History, present position and achievements of trade unions in the U. K., U. S. A., U. S. S. R. and South East Asian Countries. Impact of their growth on a nation's economy.

Growth of industrial labour in India and its chief characteristics. Distribution of Industrial labour between different industries in India.

History, functions, structure and finances of Trade Unions in India. Employers' Organisations in India.

Principles of collective bargaining; measures to encourage collective bargaining in India.

Conciliation, mediation and arbitration as methods of industrial peace. Principles and machinery of industrial relations in the U. K., U. S. A. and South East Asian countries. Joint consultation in industry.

Industrial disputes in India. Development and existing machinery for industrial relations. A critical study of the working of conciliation and arbitration in India.

Industrial relations in Rajasthan.

International Labour organization, brief history, constitution, organisation, functions and achievements. India and the International Labour organization.

Labour Economics

Paper II—Wage Policy and Social Security

Characteristics of labour market.

Wage theories; the concept of exploitation of labour; methods of incentive payment.

Principles and economic implications of State regulation of wages. State regulation of wages in the U. K., U. S. A. and South-East Asian countries.

Wage policy and full employment.

Principles of profit sharing and co-partnership; their applications in India.

Wages of Industrial and agricultural workers in India. State regulation of wages in India. Standard of living of workers in India.

Organizations, functions and achievements of Employment Service Organization in the U. K., U. S. A. and South East Asian countries.

Methods of labour engagement in India. Employment Service Organization, its working, achievements and limitation in India.

Organisation and financing of social security. History and present position of Social security in U. K., U. S. A., U. S. S. R. and South-East Asian countries.

History and present position of social security in India; scope and limitations for its further expansion.

Housing of labour in India. Labour welfare facilities provided by employers, workers and Government.

Books recommended for Papers I & II :

No change.

F. Banking :

Paper I. Principal Banking systems

No change.

Paper II. Problems of Indian Banking after para III—add
as a separate para—

The State Bank of India

(No other change).

Books recommended :

No change.

G. Public Utilities and Transportation :

Paper I. Public Utilities.

Paras I, II & III of old Paper I.

Para I of old Paper II.

Paper II. Transport.

Para IV of old Paper I.

Paras II, III, IV & V of old Paper II.

Books recommended :

No change.

H. Mathematical Statistics and Econometrics :

Paper I. Mathematical Statistics.

Paper II. Econometrics.

(Courses to be drafted later).

Economic Administration (delete).

I. Two of the following papers :Paper I. Intensive study of life and works in Economics of *or* of the following authors :Adam Smith—Ricardo—Malthus—
John Stuart Mill—Karl Marx.For the M. A. Previous examination of 1960 and M. A. Previous
and Final Examinations of 1961 :

Adam Smith.

Books recommended :

Scott : Life of Adam Smith.

Adam Smith : Wealth of Nations (edited by Cannon)

Adam Smith : Theory of Moral Sentiments
(relevant portion).

Paper II. Demography.

(Courses to be drafted later).

Paper III. Economic Systems :

No change.

Paper IV. Public Administration.	} Same courses as prescribed for M. A. Political Science, Previous & Final Examinations.
Paper V. International Relations.	
Paper VI. Principles of Sociology.	

Paper VII. Economic Administration in India and Abroad.

(Same as prescribed for M. A. Previous and Final Examinations for Economic and Public Administration).

Paper VIII. Principles of Economic Planning and Economic Planning Abroad.

Economic Planning—evolution, definition, objective, scope and significance.

Types of Planning—Planning under Capitalism, Socialism and mixed economy.

15. Dobb : Soviet Economic Development since 1917.
16. Ecafe : Annual Economic Surveys.
17. Economic Commission for Europe : Annual Economic Surveys.
18. United Nations : World Economic Surveys.

Paper IX—Economic Survey

No change.

APPENDIX F I

(Ref. Fac. of Arts Res. No. 19 of Nov 5, 1958)

Minutes of a meeting of the Board of Studies in Sanskrit held on 5th and 6th May, 1958 at 12.30 p.m. and 8 a.m. respectively at the University Office, Jaipur.

Present :

1. Prof. P. C. Jain (*In the Chair*)
2. Dr. Surya Kant (Present on 5th May only)
3. Dr. C. B. Gupta
4. Prof. R. G. Ojha
5. Prof. P. N. Shastri
6. Prof. V. R. Nagar

Since Dr. Fateh Singh, the Convener of the Board did not attend the meeting, Prof. P. C. Jain was requested to act as Chairman of the meeting.

1. *Resolved to recommend :* The following Scheme and Courses for the Pre-University Examination :—

Scheme :

There will be one paper of 100 marks and will consist of 3 sections :

Section A. Poetry	20 marks
Section B. Prose & Drama	40 „
Section C. Grammar,	20 „
Translation	10 „
& Composition.	10 „

Syllabus :

Poetry—easy 1 Canto of a Mahakavya.

Prose—4 easy pieces of representative prose writers.

Drama—One easy act of a play or one one-act play of either
Kalidasa or Bhāsa.

Books (for 1959 only) :

Kalidasa : Raghuvansha 2nd Canto.

Bhasa : Dutavekyam.

N. D. Swami : संक्षिप्त कादम्बरी Pages 1—21 Shri Ram Mehra
& Co., Agra.

Grammar : Conjugation of the roots prescribed for the High School Examination 1959 in the following :

लकार, लट्, लोट्, लङ्, लिङ् (विधि and आशिष),
लृट् and लृङ् and

Karakas and Samasas.

Translation : One alternative passage in easy Hindi or English each of equal standard.

Composition : Essay of biographical or descriptive nature.

Books recommended :

Dr. Babu Ram Saxena : सरल संस्कृत व्याकरण
(Ram Narain Lal, Allahabad).

Dr. Kapil Deva : रचनानुवाद कौमुदी Part I
(विश्वविद्यालय प्रकाशन, गोरखपुर) ।

B. Three Year Degree Course Examination Scheme and syllabus.

There will be one paper in the 1st and 2nd year each and two papers in the 3rd year. The maximum marks will be 100 in each of these papers. The distribution of marks will be as follows :

I Year Degree Course :

Paper I—Drama	60 marks.
Prosody	20 „
Translation	10 „
& Composition.	10 „

II Year Degree Course :

Paper II—Prose	40 „
History of Sanskrit Literature	40 „
Translation	10 „
& Composition.	10 „

III Year Degree Course :

Paper III—Poetry	60 „
Alankara	20 „

Translation from Hindi or English into Sanskrit.	20 Marks
Paper IV—Elements of Indian Culture	50 „
Rapid Reader	20 „
Grammar	10 „
Composition.	20 „

Syllabus.

Paper I—Drama : Any one drama of either Kalidas, Bhavabhuti or Shudraka.

Paper II- Prose : 8 to 10 pieces selected from the books of representative prose authors (Maximum No. of pages of the text to be 50).

History of Sanskrit Literature:—

The Ramayan, The Mahabharat,
The Mahakavya.

Including the historical Mahakavyas.

Development of Prose and Drama.

Paper III—Two cantos from two Mahakavyas and 25 Subhashitas.

Alankaras—As given in the VIII Shikha of the Kayava
Dipika (Excluding Aloka).

Paper IV—Elements of Indian Culture.

Family—The Sanskaras and Ashramas.

Community—The Varnas and Castes.

Society—Economic life means of livelihood-Origin of writing.

Political—Sources of Revenue.

Organisation—Spiritual and Temporal power.

Kingdom and Republics.

Machinery of Government.

Administration of Justice and punishment.

Royal Officers.

Assemblies.

Grammar :—Applied grammar relating derivations, declensions, conjugations, Samasas and Karakas.

Books prescribed for the I Year Degree Course for the Examination of 1959 only. :—

Paper I - Drama—Kalidasa : Abhigyan Shakuntalam

Prosody—All the metres occurring in the abhigyan Shakuntalam.

Books recommended : वृत्तरत्नाकर

Translation : Two alternative passages, one in Hindi and one in English of equal standard.

Composition : One essay of reflective, narrative or biographical Type.

Books recommended : Apte's guide to Translation and Composition.

Apte : निवृत्त पथ प्रदर्शक

(Translated by Ram Krishna shukla).

For the II and III Yr. Degree Courses of 1960 and 1961 it was decided that these be laid down in the next meeting of the Board of Studies by which time suitable books may be available.

C. B. A. Examination 1961

Paper I—Add under

1) Kalidasa : Abhigyan Shakuntalam (Prakrit Passages will not be set for rendering into Sanskrit.)

Paper II—Add under

Sanskrit Gadya Kaumadi etc.

Lessons omitted : भृगु वल्ली & अद्भुत सरोवरानन्द

D. M. A. Examination (Previous & Final) of 1961.

Paper II Delete : (विनय सागर) नेमिदूत
(Jain Press, Kota).

Paper IV—Add under 5.

6. Baldeva Upadhyaya : वैदिक साहित्य और संस्कृति

7. Macdonald : India's Past.

2. Under Section 34 (4) (iv) of the University Act, Prof. R. G. Ojha was elected as a member to serve on the Committee for selection of examiners in Sanskrit.

3. The Board revised the panel of examiners for 1958-1959.

4. It was not considered necessary to make any comments on the question papers set for the examination of 1958.

5. With reference to the Faculty of Arts resolution No 7 dated the 19th December 1957 referring the proposal of the Board of Studies in Economics (as contained in its resolution No. 6 dated 2nd September 1957) regarding introduction of refresher course for teachers, the Board recommended that a similar course conducting research in Sanskrit be started in any one of the affiliated colleges of the University where teachers of at least 5 years teaching experience in any one of the affiliated colleges may be admitted and full salary may be given to them during the course of their training.

The meeting was over with a vote of thanks to the Chairman.

P. C. Jain
Chairman.

APPENDIX F 2

(Ref. Fac. of Arts Res. No. 19 of Nov. 5, 1958)

Minutes of the meeting of the Board of Studies in Sanskrit held on 8th September, 1958 at 1.00 p.m. at the University Office, Jaipur.

Present :

1. Prof. P.C. Jain (*In the Chair*)
2. Dr. C. B. Gupta
4. Shri V. R. Nagar
4. Shri Prem Nidhi
5. Dr. Surava Kant
6. Shri R. G. Ojha.

Since Dr. Fateh Singh, the Convener of the Board did not attend the meeting, Prof. P. C. Jain was requested to act as Chairman of the meeting.

I Year 1960.

1. Resolved to recommend that courses prescribed for the first year examination of 1959 be continued for 1960.

2. 2nd Year 1960.

Prose : Dandin—विश्रुत चरितम् from दशकुमार चरितम्

Bana : शुक्रनामोपदेश from कालन्दरी

For translation and composition the same books as are recommended for I paper of 1959.

Add Charudeva : Manual of Sanskrit Translation (English or Hindi edition).

3. As for the final examination, it was decided that it should be taken next year when the books are available.

4. Resolved that the University be requested to get the books prepared from the publishers according to the syllabus prescribed for all the four papers of the Three-Year Degree Course.

P. C. Jain.
Chairman.

APPENDIX G

(Ref. Fac. of Arts Res. No. 19 of Nov. 5, 1958)

Minutes of a meeting of the Board of Studies in Hindi held on May 5th & 6th May, 1958, at 12.30 P. M. and 8 A. M., respectively at the University Office, Jaipur.

Present :

1. Prof. A. N. Sharma
2. Dr. Nagendra (Not present on 6th May)
3. Dr. S. N. Gupta
4. Prof. N. D. Swami
5. Prof. Vishnu Ambalal Joshi
6. Dr. K. L. Sahal

(Convener)

1. The Board recommended courses of study in Hindi for the following examinations:—

(a) Pre-University Course Examination (*Appendix I*)

(b) 1st year examination of the three-year degree course, 1959 and 1960 (*Appendix II*)

(c) 2nd year examination of the three-year degree course 1960 and 1961 (*Appendix III*)

(d) Final year examination of the three-year degree course 1961 and 1962 (*Appendix IV*)

2 (a) Resolved to recommend that the courses of study for the B. A. examination of 1961 be the same as for the examination of 1960 except with the modifications given *vide Appendix V*.

(b) Resolved to recommend that the existing courses of study for the M. A. Examination be repeated for the examination of 1961, except with the modifications given *vide Appendix VI*.

3. Under Section 34 (4) (iv) of the University Act, the Board elected Shri N. D. Swami to serve on the Committee for selection of examiners in Hindi.

4. The Board revised the panel of examiners for 1958-59.

5. The Board went through the question papers set for the examinations of 1958 and offered no comments.

6. *Resolved to recommend that the existing course of study for the Proficiency Test in Hindi be repeated for the examination of 1961, except with the modifications given vide Appendix VII.*

7. *Resolved to recommend that the existing courses of study for the Hindi Examinations (Sahitya Vinod, Sahitya Visarada and Sahitya Ratnakar) of 1959 be repeated for 1960 also except with the modifications given vide Appendix VIII.*

8. With reference to the Faculty of Arts resolution No. 7 dated the 19th December 1957 the Board considered the recommendation of the Board of Studies in Economics as contained in its resolution No. 6 of September 2, 1957 regarding introducing a Scheme for Refresher course and agreed with the recommendation and felt that this facility be extended to the Board of Hindi in view of the growing need of Hindi literature both as a regional and national language.

9. The Board recommended a panel of four names in each of the following subjects as required under Ordinance 135 for appointment of referees to examine the theses submitted for the award of Ph. D. degree:-

(i) हिन्दी गद्य का वैभव काल ।

(ii) आधुनिक हिन्दी आख्यायिका का विवेचनात्मक अध्ययन ।

(iii) Trends in Modern Hindi Literature.

10. The Board considered a letter from a candidate complaining that (1) the result of the Hindi examinations of 1956 & 1957 were very stiff (2) the books prescribed by the University were not available in the market and (3) the courses are difficult and substituted the books not available in the market and noted the complaints nos. 1 and 3.

K. L. Sahal
Convener.

Appendix I

(Ref. B. O. S. in Hindi Res. No. 1 (a) of May 5 & 6, 1958)

1. Pre-University Examination

(a) General Hindi.

	Maximum Marks.	Minimum Pass Marks.	Time.
One Paper	100	33	3 Hours.

Syllabus and Text-books :

There shall be one paper of three hours duration carrying 100 marks.
It shall consist of :—

- (a) Questions requiring a general and intelligent grasp of the subject-matter of the texts prescribed for Rapid Reading.

50 marks.

Books for Rapid Reading :

- (1) कथा कुसुमाञ्जलि—लेखक डा. भागीरथ मिश्र
(राजस्थान पुस्तक मन्दिर, जयपुर) ।

- (2) प्रकाश—लेखक सेठ गोविन्ददास (प्रकाशक—भारतीय विश्व प्रकाशन, दिल्ली) (सस्ता संस्करण) मूल्य रु० २॥) ।

- (b) भाषा-ज्ञान (शब्द-प्रयोग, शब्द-युग्मों का अंतर, पर्यायवाची शब्द-बोध, लोकोक्तियों तथा मुहावरों का प्रयोग) ।

15 marks.

Book recommended :—

हिन्दी-प्रयोग—लेखक रामचन्द्र वर्मा (साहित्य रत्नमाला कार्यालय, वाराणसी) ।

- (c) General questions based on an unseen passage ... 10 marks.

Books recommended :

अपठित-संचय—पुरोहित एवं चतुर्वेदी

(स्टूडेंट्स बुक कम्पनी, जयपुर) ।

- (d) An item of composition in the form of an essay on a narrative or descriptive topic or letter-writing ... marks. 25

Books recommended :

- (1) आदर्श पत्र लेखन—शंभूदयाल सक्सेना

(नवयुग ग्रंथ कुटीर, बीकानेर) ।

- (2) निबन्ध-पारिजात—भारतभूषण त्यागी और गुलाबराय

(गयाप्रसाद एण्ड सन्स, आगरा) ।

(3) निबन्ध-रत्नाकर--जगदीश स्वरूप

(रमेश बुक डिपो, जयपुर) ।

(b) Optional Hindi

	Maximum Marks.	Minimum Pass Marks.	Time.
One paper	100	33	3 Hours.

There shall be one paper of three hours duration carrying 100 marks. It shall consist of prose-text, poetry-text and elementary knowledge of metres.

Books prescribed :

Prose Text—

हिन्दी निबन्ध-विहार by माधोदास व्यास

(गया प्रसाद एण्ड सन्त, आगरा) ।

Poetry Text—

हिन्दी काव्य—लेखक डा. गायत्री देवी वैश (विद्या भवन, जयपुर) ।

The following poets to be studied—

तुलसी, सूरदास, मीरां, रसखान, विहारी, भारतेन्दु, मैथिली शरण
गुप्त, सुमित्रानन्दन पंत, रामधारी सिंह दिनकर, गुरु भक्तसिंह ।

Books recommended for metres :

छन्द-अलंकार प्रबोध—लेखक कृष्ण कुमार पाठक

(स्टूडेंट्स बुक कम्पनी, जयपुर) ।

The following metres only :—

चौपई, चौपाई, रोला, हरिगीतिका, वीर (आल्हा), इन्द्र वज्रा,
उपेन्द्र वज्रा, उपजाति, वंशस्थ, वसंततिलका, मालिनी, शिखरिणी,
द्रुतविलंबित, मन्दाक्रान्ता, मत्स्यगद सवैया, घनाक्षरी (मनहरण),
दोहा, सोरठा, कुंडलिया, छप्पय ।

Appendix II

(Ref B.O.S. in Hindi Res. No. 1 (b) of May 5 & 6, 1958)

B. A. Three Years' Degree Course

2. First Year of 1959 and 1960

(a) General Hindi.

	Maximum Marks	Minimum Pass Marks.	Time.
One paper.	100	36	3 Hours.

There shall be one paper of three hours duration carrying 100 marks. It shall consist of :—

- (a) Questions requiring a general and intelligent grasp of the subject matter of the texts prescribed for Rapid Reading—
50 marks

(i) फूल और कलियां—लेखक रुद्रकुमार शर्मा
(लक्ष्मीनारायण अग्रवाल, आगरा) ।

(ii) दस एकांकी—देवदत्त अटल
(एस. चांद एण्ड कम्पनी, दिल्ली)
(केवल प्रथम आठ एकांकी) ।

- (b) भाषा-ज्ञान (शुद्ध प्रयोग, शब्द-युग्मों का अन्तर, पर्यायवाची तथा प्रतिलोम शब्द, लोकोक्तियों और मुहावरों का प्रयोग)
15 marks.

Books recommended :

(i) अच्छी हिन्दी—लेखक रामचन्द्र वर्मा
(साहित्य रत्नमाला कार्यालय, वाराणसी) ।

(ii) लोकोक्तियाँ और मुहावरे—गुलाबराय
(एस. चांद एण्ड कम्पनी, दिल्ली) ।

- (c) Translation of a simple English or Sanskrit passage into Hindi
10 marks.

- (d) Essay on a subject of general interest
25 marks.

Books suggested :

- (i) आधुनिक हिन्दी निबन्ध by सुरेशचन्द्र गुप्त तथा
कृष्णचन्द्र विशालंकार
(एस. चांद एण्ड कम्पनी, दिल्ली) ।
- (ii) निबन्ध-शिक्षा—वैकट शर्मा और गोपालदास
(स्टूडेंट्स बुक कम्पनी, जयपुर) ।
- (iii) अच्छे निबन्ध—मुरली मनोहर
(कल्याणमल एण्ड सन्स, जयपुर) ।

(b) Optional Hindi.

	Maximum Marks.	Minimum Pass Marks.	Time.
One paper.	100	36	3 Hours.

There shall be one paper of three hours duration carrying 100 marks. It shall consist of Prose, Drama and Fiction.

Books prescribed :

- (१) ध्रुवस्वामिनी—लेखक जयशंकर प्रसाद
(भारती भंडार, इलाहाबाद) ।
- (२) सेवा सदन by प्रेमचन्द (सरस्वती प्रेस, इलाहाबाद) ।
- (३) भारती गद्य-धारा by डा. मुन्शीराम तथा राधेश्याम त्रिपाठी
(कृष्णा ब्रदर्स, अजमेर) ।

The following essays to be studied :

१. आशा (बाल कृष्ण भट्ट)
२. आशीर्वाद (बालमुकुन्द गुप्त)
३. रामायण (महावीर प्रसाद द्विवेदी)
४. मजदूरी और प्रेम (पूर्णसिंह)
५. उत्साह (रामचन्द्र शुक्ल)
६. भारतीय साहित्य की विशेषताएँ (श्याम सुन्दर दास)
७. सच्चा साहित्यकार (हजारीप्रसाद द्विवेदी)
८. आनन्द की खोज (राय कृष्णदास)

६. साहित्य का प्रयोजन (नन्ददुलारे वाजपेयी)

१०. राजस्थानी साहित्य (नरोत्तमदास स्वामी)

Books recommended for reference:

१. प्रसाद के नाटकों का शास्त्रीय अध्ययन (ध्रुवस्वामिनी)—लेखक
डा. जगन्नाथ प्रसाद शर्मा (नन्दकिशोर एण्ड ब्रदर्स, बनारस ।
२. प्रेमचन्द की उपन्यास कला—लेखक जनार्दन प्रसाद झा 'द्विज' ।
३. हिन्दी के साहित्यकार (इण्डियन प्रेस, इलाहाबाद) ।

Appendix III

(Ref. B. O. S. in Hindi Res. No. 1 (e) of May 5 & 6, 1958)

Second Year Examination of the Three Year Degree Course for 1960 and 1961.

(a) General Hindi.

	Maximum marks.	Min. Pass marks.	Time
One Paper.	100	36	3 hrs.

There shall be one paper of three hours duration carrying 100 marks. It shall consist of—

- (a) Questions requiring a general and intelligent grasp of the subject matter of the texts prescribed for Rapid Reading— 50 marks.

Books for Rapid Reading :—

- १) पाठ्य-संग्रह—ले० भी रामकृष्ण शिलीमुख (First 15 lessons only). (राजस्थान पुस्तक मंदिर, जयपुर) ।
- २) पंचवटी—मैथिली शरण गुप्त
(साहित्य सदन, चिरगांव, झांसी) ।
- ३) नारायण राव (अडिवि वापिराजु) (प्रकाशक—साहित्य अकादमी, नई दिल्ली) if the publisher reduces the price to Rs. 4/- only, otherwise अहिल्या बाई by वृंदावनलाल वर्मा (मयूर प्रकाशन, झांसी) ।

- (b) Outline History of Hindi Literature— 20 marks.

Book recommended :

हिन्दी साहित्य का संक्षिप्त इतिहास by नंददुलारे वाजपेयी
(प्रकाशक—इण्डियन प्रेस, इलाहाबाद) ।

- (c) Essay on a subject of general interest— 30 marks.

Book recommended :

संजीवनी by R. P. Garg (प्रकाशक—कृष्णा ब्रादर्स,
कचहरी रोड, अजमेर) ।

(b) Optional Hindi

	Maximum Marks.	Minimum Pass Marks.	Time
One paper	100	36	3 Hours.

There shall be one paper of three hours duration carrying 100 marks. It shall consist of Modern Hindi Poetry Texts.

Books Prescribed :—

१. आधुनिक काव्य—संचय—संपादक विष्णुराम नागर
(प्रकाशक—श्रीराम मेहरा एण्ड कंपनी आगरा) excluding
मैथिली शरण गुप्त and सूर्यकान्त त्रिपाठी 'निराज्ञा' ।
२. विष्णु प्रिया—ले० मैथिलीशरण गुप्त
(साहित्य सदन, चिरगांव, झंसी)

Book recommended for reference :—

हिन्दी के साहित्यकार (इण्डियन प्रेस, इलाहाबाद)

Appendix IV

(Ref. B. O. S. in Hindi Res. No. 1 (d) of May 5 & 6, 1958)

4. Final Year Examination of the Three Year Degree Course for 1961 & 1962.

Optional Hindi

Scheme :

		Maximum Marks.	Minimum Pass Marks.	Time
Paper I	Old Poetry Texts & Alankars, etc.	100	72	3 Hours
Paper II	Prose Texts & History of Hindi Literature.	100		3 Hours

There shall be two papers each of three hours duration and carrying 100 marks.

Paper I—Old Poetry Texts and Alankars etc.

Books Prescribed :—

१. भारती पद्य-धारा संपादक—मुंशीराम शर्मा & बाबूराव बोशी
(प्रकाशक—कृष्णा ब्रदर्स, अजमेर) ।

The following authors are to be studied :

कवीर, सूर, तुलसी, मीरा, केशव ।

२. संक्षिप्त जायसी—ले० शंभूदयाल सक्सेना
(प्रकाशक—लक्ष्मीनारायण अग्रवाल, आगरा) ।

अलंकार, रस और शब्द-शक्ति ।

(a) अलंकार (The following Alankaras only)—

अनुप्रास, यमक, श्लेष, वक्रोक्ति,
उपमा, रूपक, उत्प्रेक्षा, प्रतीप, अपन्हुति, उल्लेख,
स्मरण, आतिमान, संदेह, अतिशयोक्ति, दीपक,
दृष्टान्त, अर्थान्तरन्यास, निदर्शना, अप्रस्तुतप्रशंसा,
समासोक्ति, विरोधामास, असंगति, विभावना,
विशेषोक्ति, यथासंख्य, व्याजस्तुति, परिसंख्या,
तद्गुण, मीलित, मुद्रा ।

(b) रस—रस-निष्पत्ति (साधारण ज्ञान)

(c) शब्द-शक्ति—अभिवा, लक्षणा, व्यंजना

(साधारण परिचय) ।

Books recommended :—

१. काव्य-प्रदीप—रामवहोरी शुक्ल

(प्रकाशक—हिन्दी भवन, इलाहाबाद) -

२. काव्य-विज्ञान—रामकृष्ण शुक्ल ।

Paper II—Prose Texts and History of Hindi Literature :—

(a) Prose Texts :

१. अर्थात के चलचित्र—लेखक महादेवी वर्मा

(भारती मंदार, इलाहाबाद) ।

२. प्रतिनिधि आलोचक (संक्षिप्त संस्करण)

(एन. चान्द एण्ड कम्पनी, दिल्ली) । मूल्य रु० २।।

(b) History of Hindi Literature :

Book recommended :

हिन्दी साहित्य का इतिहास—लेखक डा. लक्ष्मीनगर वाग्भूषण ।

Book recommended for reference :

महादेवी वर्मा (प्रकाशक—विनोद पुस्तक मन्दिर, आगरा) ।

Appendix V

(Ref. B. O. S in Hindi Res. No 2 (a) of May 5 & 6, 1958)

B. A. Examination of 1961

HINDI

Paper I—The Lesson काव्य कला by महादेवी वर्मा in the book
आदर्श आलोचना by दशरथ ओझा to be excluded.

Paper II—ब्रह्मै रामायण and विनय-पत्रिका only from दुलसी काकली ।

N. B. ;—These changes are to be made with effect from
the Examination of 1959.

The changes have been made in view of the
practical difficulty in covering the course.

Paper III—

Add बिखरे फूल by डा. चरनामसिंह ।

Appendix VI

(Ref B. O. S. in Hindi Res. No. 2 (b) of May 5 & 6, 1958)

M. A. (Previous & Final) Examination of 1961

Paper I—

Substitute हिन्दी की श्रेष्ठ कहानियां by डा. श्रीकृष्णलाल (साहित्य भवन लि., इलाहाबाद) for प्रतिनिधि कहानियां by पहाड़ी ।

Add under recommended books :

हिन्दी का गद्य साहित्य—लेखक रामचन्द्र तिवारी
(विश्वविद्यालय. प्रकाशन, गोरखपुर) ।

Paper II—

Substitute राम की शक्ति-पूजा by सूर्यकांत त्रिपाठी 'निराला' from अपरा (साहित्यकार संसद, इलाहाबाद) for तुलसीदास by the same author.

Under कामायनी by जयशंकर प्रसाद substitute चिन्ता, श्रद्धा, लज्जा, इडा और रहस्य सर्ग for चिन्ता, आशा, श्रद्धा, काम और लज्जा सर्ग ।

After आधुनिक कवि by सुमित्रा नन्दन पंत—add
'(केवल प्रथम सत्तर पृष्ठ)' ।

Change the order of the books prescribed as follows :—

१. प्रिय प्रवास—अयोध्यासिंह उपाध्याय (सर्ग ११ से अन्त तक) ।
२. साकेत—मैथिलीशरण गुप्त (सर्ग १, २, ८ और ६) ।
३. कामायनी—जयशंकर प्रसाद (चिन्ता, श्रद्धा, लज्जा, इडा और रहस्य सर्ग) ।
४. राम की शक्ति-पूजा—सूर्यकांत त्रिपाठी 'निराला' ।
५. आधुनिक कवि—सुमित्रानन्दन पंत (केवल प्रथम सत्तर पृष्ठ) ।

Add under recommended books :

मैथिली शरण गुप्त—कवि और भारतीय संस्कृति के आख्याता by
उमाकांत गोयल (नैशनल पब्लिशिंग हाउस, दिल्ली) ।

Paper III—

Under घनानन्द कवित्व substitute केवल प्रथम एक सौ कवित्व for
केवल प्रथम २०० कवित्व ।

Under recommended books add :

भक्ति दर्शन by सरनामसिंह

Paper V—

History of Hindi Literature & Principles of Criticism.

Add under books recommended :

हिन्दी अलंकार साहित्य—लेखक डा० ओम प्रकाश

प्रकाशक—भारती साहित्य मंदिर, दिल्ली । नूतन ६ २०) ।

Paper VII—

Pali— add घम्मपद (यमक वर्ग, अप्रमाद वर्ग, पुष्प वर्ग, तालवर्ग,
पंडित वर्ग, दंड वर्ग, सुखवर्ग और घर्मिष्ठ वर्ग) ।

Apabhramsa—*add under recommended books :*

अपभ्रंश साहित्य by हरिवंश कोछड़ (भारती साहित्य मंदिर, दिल्ली) ।

Dingal — *add* वसंत विलास edited by H. K. Vyas.

Surdas— *add* चूर की काव्यकला b मनमोहन गौतम ।

Jay Shankar Prasad— *add*—

कामायनी: काव्य, संस्कृति और दर्शन by द्वारका प्रसाद

(विनोद पुस्तक भण्डार, आगरा) ।

Appendix VII

(Ref. B. O. S. in Hindi Res. No. 6 of May 5 & 6, 1958)

Proficiency Test in Hindi for the examination of 1961

Substitute :

कथा कुंज by डा. किरण कुमारी गुप्त (प्रकाशक—लक्ष्मीनारायण
अग्रवाल) for भारत की पांच कलाएं by उमाशंकर ।

Appendix VIII

(Ref. B. O. S. in Hindi Res. No. 7 of May 5 & 6, 1958)

Hindi Examinations of 1960

1. Sahitya Vinod—

No change.

2. Sahitya Visharada—

विश्व साहित्यिक by उमेशचन्द्र to be substituted by सत्य और स्वतन्त्रता के उपासक by गुलाबराय (लक्ष्मीनारायण अग्रवाल, आगरा) and छत्रसाल by रामचन्द्र वर्मा to be substituted by मैकली दीदी by शरच्चन्द्र चटर्जी (इण्डियन प्रेस, इलाहाबाद) ।

3. Sahitya Ratnakar—

No change.

APPENDIX H

(Ref. Fac. of Arts Res. No. 19 of Nov. 5, 1958)

Minutes of a meeting of the Board of Studies, in Urdu, Persian and Arabic held on the 7th and 8th May, 1958 at 12.30 p. m. and 8.30. a. m., respectively at the University Office, Jaipur.

Present :

1. Shri Syed Zahiruddin Alvi
2. Shri B. S. Bhatnagar
3. Shri R. D. Zia
4. Shri S. M. Ilyas Jafri
5. Shri I. D. Rizvi

(Convener)

1. The Board recommended courses of study in Urdu and Persian for the following examinations (*Vide Appendix*).

(a) Pre-University Course Examination.

(b) 1st year examination of the three-year degree course, 1959 and 1960.

(c) 2nd year examination of the three-year degree course, 1960 and 1961.

(d) Final year examination of the three-year degree course, 1961 and 1962.

2. (a) Resolved to recommend that the Courses of study for the B. A. examination of 1961 be the same as for the examination of 1960.

(b) Resolved to recommend that the existing courses of study for the M. A. examinations be repeated for the examinations of 1961.

3. Under Section 34 (4) (iv) of the University Act, the Board elected Shri R. D. Zia to serve on the Committee for selection of examiners in Urdu, Persian and Arabic.

4. The Board revised the panel of examiners for 1958-59.

5. The Board went through the question-papers set for the examinations of 1958 and offered the following comments :

In Urdu Paper I, in question No. 1 the translation of Urdu Prose

pieces into English is unwarranted. Translation of Urdu Text into English is not taught for this paper. The last question on Rhetoric should not have been set in this paper. This question could only be set in the second paper. The examiners should be more careful in setting the paper and should not go beyond the prescribed course for the paper.

I. D. Rizvi
Convener.

Appendix

(Ref. B. O. S. in Urdu, Persian and Arabic
Res. No. 1 of May 7 and 8, 1958)

Pre-University Examination.

URDU

The examination shall comprise one paper of 3 hours' duration carrying 100 marks :

Prose	40 marks
Poetry	40 marks
Composition	15 marks
Figures of Speech	5 marks.

Books prescribed :

1. Naqooshe-Adab by Prof. Mutiur Rehman & published by Ram Narain Lal, Bookseller, Allahabad (Price Rs. 2. 50)

Prose portion—omitting : Tamaddun, Bahar Men urdu
Tarikh, Nawal Navisi.

Poetry—pp. 3-48.

2. Urdu Grammar and Composition by Maulvi Mohamed Husain (Young Man and Co., Delhi).

PERSIAN

The examination shall comprise one paper of 3 hours' duration carrying 100 marks :—

Prose	40 marks
Poetry	40 marks
Translation from Urdu into Persian	20 marks.

Books prescribed :

1. Nisab-e-Farsi by Dr. Ghulam Sarwar & published by Educational Book House, Aligarh (Price Rs. 1. 50)

Prose portion (omitting Raheno Haseen Kasimzada)

Poetry (omitting Qasals).

2. Makhzanul Fawaid by H. Jalaluddin Ahmed Jafri & published by Anwar Ahmedi Press, Allahabad.

Three-year Degree Course, 1960, 1961 & 1962

URDU

First Year (Degree Course):

There will be one paper of three hours' duration carrying 100 marks :

Prose and Poetry

Prose	50 marks
Poetry	50 marks

Books prescribed :

Prose :

1. Wardat by Premchand, published by Hali Publishing House, Delhi.
2. Intikhab-e-Nasr edited by the Department of Urdu, Muslim University, Aligarh and published by Ram Narain Lal Agarwal, Allahabad (Rs. 2. 94) (First half).

Poetry :

1. Intikhab-e-Sukhan edited by the Department of Urdu, Muslim University, Aligarh and published by the University Publishers, Shamsad Building, Aligarh (Price Rs. 2) (First half).

Second Year (Degree Course)

There will be one paper of three hours' duration carrying 100 marks :

Prose & Poetry :

Prose	50 marks
Poetry	50 marks

Prose : Intikhab-e-Nasr (Second half)

Poetry : Intikhab-e-Sukhan (Second half)

Bang-e-dara Part 1 edited by Naseem Qureshi, published by Educational Press, Aligarh (Rs. 1-25).

Final Year (Degree Course):

There will be two papers each of three hours' duration, carrying 100 marks each :

Paper I— Prose, Poetry and Drama.

Books prescribed :

Prose—Adab aur Nazam by Prof. A. A. Saroor.

Poetry—Dewan-e-Ghalib Radif-noon-ye only.

Intishab Dewan-e-Ghalib by Prof. M. D. Faride, published by Muslim Educational Press, Aligarh (Rs. 2.50).

Drama—Parda-e-Ghaflat by Dr. Abid Hussain, published by Hali Publishing House, Delhi (Rs. 1.50).

Paper II— Essay, Translation & Outline History of Urdu Literature :

Essay : 30 marks

Translation : 20 marks

Outline History of Urdu Literature : 50 marks.

Books recommended :

1. Jaded Mazameen published by Muslim Educational Press (Rs. 2.94).
2. Tasveer-e-Adab by Hamid Husain Jilani, published by Sir Syed Book Depot, Aligarh (Rs. 5).
3. Mukhasur Tarikh Adab-e-Urdu by Dr. Aijar Husain, published by Kitabghar, Delhi (Rs. 6).
4. Urdu Adab ki Tareekh by Naseem Qureshi, published by Sir Syed Book Depot, Aligarh (Rs. 3).

Note : Critical questions will be set in the question papers of all the three years on the authors and poets prescribed.

Three Year Degree Course, 1959, 1960 & 1961

PERSIAN

First Year—

There will be one paper of three hours' duration carrying 100 marks :

Modern Prose and Poetry.

Book prescribed :

Sukhan-e-nas Part II by Dr. Ghulam Sarwar, published by Educational Book House, Aligarh (Rs. 1.50).

Second Year—

There will be one paper of three hours' duration carrying 100 marks :

Classical Prose and Poetry

Book prescribed :

Selections of Prose and Poetry for the B. A. Persian Course by Prof. Hamid Hussain Qadri and published by Laxminarain Agarwal, Agra. (Price Rs. 4).

Second Year—

Prose :

1. Chahar Muqabla—Muqalaye Doom.
2. Siyasat Nama Az Nizamulmuluk Tosi—Inder Amal Sere Sadan --Bhosla Az Ahwal—Ba Toofiq Alla Tala.

Poetry :

1. Qasa'id—Fazi-Va-Qani.
2. Gazalliat Iraqi—Sayeedi Sahib—Abutalib Kalim.

Final Year—

There will be two papers each of 3 hours duration and each carrying 100 marks,

Paper I—Classical Prose and Poetry.

Prose—

Selections as given in the prescribed book—

1. Inshai Abulfazal.
2. Ayeene Akbari
3. Tarikhe Jahankusha.

Poetry—

Selections as given in the prescribed books :

1. Qasa'id—Khaqani, Anvari, Urfi.
2. Gazalliat—Hafiz, Urfi, Naziri, Galib.

Paper II—

An Outline History of Persian Literature and Translation and Figures of Speech.

- | | |
|--|----------|
| (a) An Outline History of Persian Literature | 60 marks |
| (b) Translation from Urdu into Persian | 30 marks |
| (c) Figures of Speech. | 10 marks |

Books recommended :

- (1) Serulazm Musannifa—Sunil Ulaqi, Matbuya Dara Tufeesh Azam. (Part I, II)
- (2) Outline History of Persian Literature by A. H. Farzdi.
- (2) Makhzanulquayad, Jalaluddin Ahmed Jafri
Anwar Ahmadi Press, Allahabad.
- Ayeena Balagāt—Anwar Ahmadi Press, Allahabad.

APPENDIX I

(*Ref Fac. of Arts Res. No. 9, 10 and 19 of Nov. 5, 1958*)

Minutes of a meeting of the Board of Studies in Sociology held on 7th & 8th May 1958, at 12. 30 p. m. and 8. a. m. respectively at the University Office, Jaipur.

Present :

1. Shri O. P. Sharma
2. Shri Ram Ahuja
3. Shri Brij Raj Chauhan
4. Shri R. B. S. Tomar

(*Convener*)

1. The Board recommended courses of study in Sociology for the following examinations (*Vide Appendices I & II*)

(a) Pre-University Course Examination

(b) 1st Year examination of the three-year degree course, 1959 and 1960

(c) 2nd year examination of the three-year degree course 1960 and 1961.

(d) Final year examination of the three-year degree course, 1961 and 1962.

2. (a) *Resolved to recommended that* the courses of study for the B. A. examination of 1961 be the same as for the examination of 1960.

(b) *Resolved to recommended that* the existing courses of study for the M. A. examination be repeated for the examination of 1961. except with the modifications given *Vide Appendix III*.

3. Under Section 34 (4) (iv) of the University Act, the Board elected Shri Brij Raj Chauhan to serve on the Committee for selection of examiners in Sociology.

4. The Board revised the panel of examiners for 1958-59.

5. The Board went through the question papers set for the examinations of 1958 and offered no comments.

6. With reference to the Faculty of Arts resolution No. 6 dated the 19th December 1957 the Board is of the view that the underlying principle contained in the resolution of the Board of Studies in Economics

(No. 7 of 2nd September 1957) regarding introduction of Refresher Courses is sound and it may be implemented by stages in various other subjects also.

7. With reference to the letter No. 6273/58 dated the 2nd April 1958, received from Director of Economics and Statistics, Government of Rajasthan, Jaipur, the Board recommended to incorporate the following publications of the Bureau of Statistics, Rajasthan for the Second Year of the three year degree course.

1. Basic Statistics (Rajasthan)
2. Statistical Atlas (Rajasthan)

8. *Resolved to recommend* that Sociology be introduced as an optional paper for the Pre-University course in view of the fact that a paper on all other subjects taught at the B. A. level have been included in the Pre-University course. A proposed syllabus is appended, *Vide Appendix I*.

9. *Resolved to recommend* that a request be sent to the Board of Secondary Education, Rajasthan, to introduce Sociology as an optional paper at the Higher Secondary stage. The introduction of courses Sociology at this level shall furnish a better grounding to follow the recommended for three year degree course in Sociology. Sociology has been introduced at the Under-graduate classes in some of the neighbouring states.

10. With reference to the letter No. F.36-5/58 (H) dated the 14th March 1958 from the Secretary, University Grants Commission, New Delhi regarding the introduction of 'Forest Economy and Tribal Welfare' or any aspect of it in the syllabus of post-graduate studies, the Board observed that a paper on 'Applied Anthropology' under the group 'Social Anthropology and Tribal Welfare' adequately covers a study of tribal welfare and the same be communicated to the Secretary, University Grants Commission along with a copy of paper number (ii) of Group A for M. A. Sociology.

11. The Board *recommended* that the book 'Samaj Shastra ki Ruprekha' written by Prof. R. B. Tomar be included as a book for reference for B. A. Part I Sociology of the three-year degree course as a special case since there is a great scarcity of standard books in Hindi in the subject and students offering Hindi medium are expected to read Hindi books. Since the author is a member of the Board of Studies in Sociology, this fact has been brought to the notice of the Faculty. This book has been recommended as a text-book by Vikram and Nagpur Universities.

R. B. S. Tomar
(Convener).

Appendix I

(Ref B. O. S. in Sociology Res. Nos. 1 & 8 of May 7 & 8, 1958)

Pre-University Course Examination

Sociology—

- (a) Basic concepts—Society, group, community, folkways, Customs, Mores, Institution, Association.
- (b) Participation in Social life—Family, Kin, Caste, Village, City, Region, Nation.
- (c) Social Problems—Poverty, Juvenile Delinquency, Beggary, Untouchability.
- (d) Social Welfare—Community Projects, Youth Welfare, Composition and functions of Planning Commission, Central Social Welfare Board and Village Panchayats.

Books for Reference :

१. कैलाश नाथ शर्मा : समाज शास्त्र
२. खुराज गुप्त : समाज शास्त्र
३. मोतीलाल : समाज शास्त्र
४. समाज कल्याण (भारत सरकार)
५. कुरुक्षेत्र (भारत सरकार)

Appendix II

(Ref. B.O.S. in Sociology Res. No. 1 of May 7 & 8, 1958)

First Year of the Three Year Degree Course

Paper I Principles of Sociology—

- (a) Nature, Scope, Methods of Sociology—Relation of Sociology with other Social Sciences.
- (b) Meaning and forms of Social Processes—Interaction, accommodation competition, conflict, Integration, and Assimilation.
- (c) Groups—Primary and Secondary, Crowd, Economic, Political and Cultural A-sociations, Rural and Urban Groups.
- (d) Environment—Social, Geographical and Cultural, Heredity.

Books recommended :

- MacIver and Page : Society (Macmillan)
 Gillin and Gillin : Cultural Sociology (Macmillan)
 Gisbert : Sociology (Longmans).

Books for Reference :

- Green : Sociology
 Ogburn & Nimkoff : A Handbook of Sociology (Routledge)
 Ginsberg : Sociology (O. U. P.).
 Tomer : Samaj Shastra ki Ruprekha Part I & II
(Datt Brothers, Ajmer).

Second Year of the Three Year Degree Course

Paper I Social Survey—

The paper shall be divided into two parts as follows :

1. Theory 70
2. Practical 30

The division of marks in Practical shall be as follows :

- | | |
|-------------------------|----|
| (a) Practical Note-Book | 10 |
| (b) Assignments | 15 |
| (c) Viva-voce | 5 |

Social Survey (Theory)—

- (a) Meaning and Nature of Social Survey, Planning and execution of Social Survey, working hypothesis, Statement of objects and reasons of Survey.

- (b) Methods of Social Survey—Pretesting, Sampling, Pilot Surveying.
- (c) Schedule, Questionnaire, Interview, Observation.
- (d) Presentation of Data, Graphs, Charts and Diagrams.

Books Recommended :

1. P. V. Young : Scientific Social Surveys & Research.
2. Basic Statistics, Rajasthan (Annual)
3. Second Five Year Plan Pictorial (Govt. of India)
4. Statistical Atlas (Rajasthan)

Social Survey (Practical)—

A. Representation of the Data in the following forms :

(i) Bar Diagrams	3
(ii) Area Diagrams	3
(iii) Pie Diagrams	3
(iv) Graphs	5

B. Framing of Questionnaires

C. Preparation of interview Guide and its administering.

A practical note-book covering the prescribed practical work shall be maintained by every student, who shall get the same duly corrected.

The external examiner, in collaboration with the internal one, shall conduct the practical test, which shall include exercises on presentation of data and field techniques and a viva-voce test on practical work and techniques of survey.

Students shall do practical work for two periods a week in batches consisting of not more than 20. This work shall be in addition to the usual periods allotted for theory class. Private candidates may carry their practical work under the guidance of a Head of the Deptt. of an affiliated college for a period not less than three weeks.

Note—Candidates shall observe the actual working of social welfare agencies. Candidates will maintain a note-book of field work covering a period of not less than seven days under the supervision of the Head of the Department and a certificate to that effect be sent to the Registrar by the end of January preceding the examination. Private candidates may conduct their fieldwork under the guidance of

any Head of the Department of Sociology of any affiliated college or Block Development Officer of District Social Welfare Officer and a certificate to that effect be obtained from them and sent to the Registrar.

Final Year of the Three Year Degree Course

Paper I *Indian Social Institutions—*

- (A) Marriage among Hindus and Muslims, Legislation in India relating to marriage, Problems connected with marriage, Dowry, Child-marriage, Widow marriage, Divorce.
- (B) Family-functions, forms, Joint family Recent Trends, Family Disorganisation and Re-organisation.
- (C) Caste: Origin, functions, changing patterns, Inter-caste relations, Recent Trends, Backward classes-their uplift and constitutional measures, Varna, Ashram, class.
- (D) Village Community, Role of Panchayats, Co-operatives and Community Projects in Rural Reconstruction.

Books Recommended :

Prabhu : Hindu Social Organisation (Popular, Bombay)

Kapadia : Marriage and Family in India (Oxford)

Ghurye : Caste and class in India (Oxford)

Hutton : Caste in India (Oxford)

Malviya : Village Panchayats in India (A. I. C. C., New Delhi)

Paper II *Social Anthropology—*

- (A) Anthropology : Definition and Scope, Origin of man; early man in the east and west.
- (B) Race—its meaning and reality, Races of man.
- (C) Culture, its meaning, Invention and diffusion, Aspects of Culture.
- (D) Social Structure : Family, marriage, kin, clan, caste and other units of Social organisation, Primitive religion and magic, Art, mythology and oral literature, Primitive Law.
- (E) Anthropology and modern life : Applications of anthropology to administrative and social problems.

*Note:—*Candidates are expected to illustrate their answers with examples drawn from the Indian life and be familiar with the Indian Problems.

Books recommended :

Mazumdar and Madan : An Introduction to Social Anthropology (Asia)

Beals and Hoizer : An Introduction to Anthropology (Macmillan)

Hoebel : Man in the Primitive World (Mc Graw-Hill)

Hutton : Caste in India (Cambridge University-Press)

Books for Reference :

Malinowski : Crime and Custom in Savaga Society (Kegan Paul)

Herskovits : Man and his works.

Kluckhohn : Mirror for Man (Harrap)

Census of India (1931) and Rajasthan (1951)

Appendix III

(*Ref. B.O.S. in Sociology Res. No. 2 (b) of May 7 & 8, 1958*)

The note on the top of syllabus in Sociology be as follows :—

There shall be eight papers—four compulsory and four optional. Each paper shall carry 100 marks. A candidate shall be required to take four papers in the Previous and the remaining four in the final as specified below.

M. A. Previous

1. Paper I Principles of Sociology
2. Paper III Social Research and Field Techniques
3. & 4. Any two of the remaining papers except Field work

M. A. Final

- 1, 2 & 3. Any three of the remaining papers except those offered at the M. A. Previous Examination.
4. Field work.

APPENDIX

(Ref. Fac. of Arts Res. No. 19 of Nov. 5, 1958)

Minutes of a meeting of the Board of Studies in Geography held on 7th 8th May 1958 at 12.30 p. m. at the University Office, Jaipur.

Present :

1. Dr. S. M. Mehrotra
2. Shree M. L. Solanki
3. Shree L. N. Upadhyaya
4. Shree P. N. Chaturvedi
5. Shree G. N. Mathur

(Convener)

1. The Board recommended courses of study in Geography for the following examinations : (*Vide Appendix I*)

(a) Pre-University Course Examination.

(b) 1st Year examination of the three-year degree course, 1959 & 1960.

(c) 2nd year examination of the three-year degree course, 1960 & 1961.

(d) Final year examination of the three-year degree course, 1961 & 1962.

2. (a) *Resolved to recommend that the Courses of study for the B. A./B. Sc. examination of 1961 be the same for the examinations of 1960.*

(b) *Resolved to recommend that the existing courses of study for the M. A. examinations be repeated for the examinations of 1961, except with the modifications given (*vide Appendix II*).*

3. Under Section 34 (4) (iv) of the University Act, the Board elected Shree Laxmi Narayan Upadhyaya, S. D. Government College, Beawar, to serve on the Committee for selection of examiners in Geography.

4. The Board revised the panel of examiners for 1958-59.

5. The Board went through the question-papers set for the examinations of 1958 and offered no comments.

6. With reference to the Faculty of Arts Res. No. 7 dated the 19th December 1957, the Board considered the following recommendation of

the Board of Studies in Economics (Res. No. 6 dated September 2, 1957) and offered no comments as the Board is not concerned with it.

“The Board recommended that the University should introduce a course in Research Methods and Techniques in the University Department of Economics Jaipur, and enable those teachers in Economics in affiliated colleges who have put in at least five years service to spend a year in the department while receiving their full salary”.

7. The Board considered letter No. 6273/58 dated the 25th April, 1958 from the Director of Economics & Statistics, Government of Rajasthan, Jaipur, requesting to incorporate certain publications of the Bureau of Statistics, Rajasthan under the head ‘books recommended’.

Resolved that as the publications were not received by the members of the Board their suitability for different standards could not be decided and recommended.

8. The Board considered letters Nos. 1199 and 1794 dated the 8th and 28th February, 1958, respectively from the Principal, Jaswant College, Jodhpur and letter No. nil dated the 28th February, 1958 from Dr. K. M. Gupta, Head of the Botany Department, Jaswant College, Jodhpur in connection with the assignment of marks on the practical note-books for the practical examinations.

The Board felt that in Geography the marks on the practical record books should be awarded by the external examiner in consultation with the internal examiner.

G. N. Mathur
Convener.

Appendix I

(Ref. B. O. S. in Geography Res. No. 1 of May 7 & 8, 1958)

Faculty of Arts

Pre-University Course—Geography.

There will be one paper of three hours duration carrying 100 marks, which will include Physical Geography, Economic and Regional Geography and Map-Work.

Physical, Economic and Regional Geography and Map-Work.

Section A : Physical Geography—

Lithosphere—The earth as a planet, its movements and their effects. Chief type of rocks and their characteristics. Earth features and its meanings—mountains, plains and plateaus. Weathering and erosion—work of water, wind, ice and waves. Lakes.

Hydrosphere—Movement of ocean waters—waves tides, and currents.

Atmosphere—Planetary and periodical winds, Temperature and rainfall—their world distribution.

Section B : Economic and Regional Geography—

Major Natural Regions of the World. Importance, growth and world distribution of the following—wheat, rice, cotton, jute, tea, tobacco, sugar-cane and sugar-beet, coal, iron, petroleum and rubber.

Section C : Map Work—

Scales—plane and diagonal.

Projections—Simple conical with one standard and simple conical with two standard parallel, zenithal equal-area, zenithal equi-distant, cylindrical equal-area (all by graphical construction).

Elementary study of contours.

Study of sheet No. 63 K/12 (Mirzapur).

Books recommended :

1. Foundations of Modern Geography (Part I)—Preece & Wood.
2. Uttar Madhyamic Bhoogol (Parts I & II)—Putoo Lal & Tripathi
(Gautum Brothers, Kanpur).
3. Sheet 63 K/12.
4. भौतिक भूगोल—रामेश्वर यादव (रमेश बुक डिपो, जयपुर) ।

5. माध्यमिक भूगोल—शान्ति स्वरूप श्रीवास्तव (इण्डियन प्रेस, इलाहाबाद) ।
6. प्राकृतिक भूगोल—गनेशलाल देपुरा ।
7. प्रारम्भिक प्रयोगात्मक भूगोल—खुनन्दन सिंह ।

The scheme of examination (in the 3 year Degree Course) in the subject of Geography will be as follows :

I Year Examination

	Max. Marks	Min. Pass Marks		Time	
	F O.Arts	F.O. Sc.	Arts	Science	
Paper I—Principles of Physical Geography—	100	125	36	45	3 hrs.

II Year Examination

Paper II—Principles of Human & Economic Geography.	100	100	36	36	3 ,,
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Final Year Examination

Paper III—Asia	75	75	}	54	54	3 ,, 3 ,,
Paper IV—India & Political or Urban Geography.	75	75				
Practical & Field Work.	50	75				
Total Marks	400	450				

1st Year Examination of the Three-Year Degree Course.

There will be one paper of three hours duration carrying 100 marks.

Paper I—Principles of Physical Geography

A broad knowledge of the physical geography of the World, including knowledge of elementary geology, sufficient for the correct appreciation of geographical phenomena, origin of the earth and origin of major relief forms. Recent theories.

Lithosphere—General classification of the materials of the earth's crust, Rocks. Earthquakes and volcanoes. Various agents of denudation and deposition. Cycles of erosion and its principle interruptions. River systems and drainage basins. Principle types of landscapes. Mountains, plains and plateaus—their origin and classification. Lakes.

Hydrosphere—Forms of sea and ocean beds. Temperature and salinity. Ocean deposits. Movements of ocean, water-waves, tides and currents.

Atmosphere—Distribution and periodical variation of the pressure and temperature of the air. Air movements and wind systems. Cyclones and storms. Humidity and precipitation. Climatic types and regions.

Books recommended :—

1. Salisbury : *Physiography* (John Murray, London).
2. Dubey : *Physical Basis of Geography* (Kitab Mahal, Allahabad).
3. Finch and Trewertha : *Elements of Geography* (Mc Graw Hill Book Co., New York).
4. *Physical Geography for Indian Students* : Cyril Fox.
5. *Physical Basis of Geography* : Chatterji.

2nd Year Examination of the Three-Year Degree Course.

There will be one paper of three hours duration carrying 100 marks.

Paper II—Principles of Human and Economic Geography.

Section A : Principles of Human Geography—

Contents, aims scope and development of Human Geography.

Interpretation of the principles of Human Geography, its relationship with and place among social sciences. Man and his environment.

Growth of population—group-formation, group-relationship, migrations of population.

Human Establishments and settlements.

Essential facts of Human Geography as enunciated by Bruhnes. Transportation. Life in Principal Geographical regions.

Section B : Principles of Economic Geography—

Scope and branches of economic geography. Principles of economic geography.

Crops—conditions of growth and world distribution of chief crops. Important minerals and chief sources of power—their exploitation and use. Pastoral industries; truck farming; various types of agriculture. Major industries and their localization. Means of transportation and communication—comparative merits of each. Trade, trade centres and trade-routes. Development of ports and harbours. Population—its growth, density, and distribution in relation to various economic activities.

Books recommended :

1. मानव भूगोल के सिद्धान्त—राजेश्वर प्रसाद करण ।
2. मानव भूगोल के सिद्धान्त—विश्वनाथ द्विवेदी ।
3. Principles of Human Geography : Huntington and Crueshing.
4. Human Geography : Brunhes.
5. Earth and Man : Davis.
6. Habitat, Economy & Society : D. Ford.
7. आर्थिक और वाणिज्य भूगोल—सी० वी० मैमोरिया ।
8. Economic and Commercial Geography : R. N. Dubey.
9. Economic and Commercial Geography : A. Dass Gupta.
10. Commercial Geography : Stamp.

Final Year Examination of the Three-Year Degree Course

There will be two papers and a practical and field-work. Each paper will be of three hours duration and carry 75 marks. The practical and field-work will carry 50 marks.

Paper III - Asia

Detailed regional and economic study of the continent of Asia (including U. S. S. R. but excluding India).

Books recommended : See Under Paper II.

Paper IV—India and Political or Urban Geography.

Section A : A detailed regional and economic study of the Geography of India with special treatment to the Geography of Rajasthan.

Section B : Political or Urban Geography—

Political Geography : Definition and scope of Political Geography. Elements of Political Geography and Geopolitik. Capitals, communications; political boundaries and frontiers. Population factor in International affairs. Political—Geographical study of the S. E. Asia.

Or

Urban Geography : Definition and scope of urban Geography. Growth of towns. Functions and functional zones. Elementary concept of town-planning. City and Region.

Books recommended for Paper I :—

1. Stamp : Asia (Methuen).
2. Cressey : Asia's Land and People.
3. एशिया—कुलभेष्ट ।

Books recommended for Paper II :—

1. Economic Geography of India : R. N. Dubey.
2. Economic Geography of India : A. Dass Gupta.
3. भारत का आर्थिक भूगोल—डी० वी० मैमोरिया ।
4. Indian Year Book : Latest.
5. India-1958 (Latest) : Government Publication.
6. Five Year Plan Report.
7. Elements of Political Geography : Valkenburg.
8. Changing Map of Asia : East & Spatle.
9. Urban Geography—Taylor.
10. Culture of Cities—Mumford.
11. City Region and Regionalism : Dickinson.

Practical and Field-Work—

Note :—(i) The Practical paper will be set on the spot by the external examiner and will include actual elementary surveying of a given area (15 marks), drawing of cartographical representations, of map projections, scales, contours etc. (this Test paper will carry 20 marks) and 15 marks are assigned for the Practical Record work.

(ii) Practical record work should be maintained by every candidate.

Scales—Plane and diagonal; comparative scale; scale of slopes.

Principles and graphical construction and uses of the following map-projections—

Simple cylindrical; cylindrical equal-area; Mercators; conical with one standard parallel; conical with two standard parallel; Bonnes, Polyconic, Sinusoidal; Mollweides, International; Zenithal equidistant and zenithal equal area.

Construction and interpretation of weather and climatic maps. Cartographical and diagrammatic representation of geographical data.

Contours and section drawing.

Study of 1", $\frac{1}{2}$ " and $\frac{1}{4}$ " topographical maps of survey of India.

Surveying—Use of chain and tape, Plane Table, and Prismatic compass.

Appendix II

(Ref. B. O. S. in Geography Res. No 2 (b) of May 7 & 8, 1958)

M. A. Previous 1960

No change is recommended in the first three papers.

Paper IV will be as follows :

Europe or Three Southern continents.

M. A. Final 1961

No change in Paper I.

Paper II and III—Any two of the following—

- (a) Economic and Commercial Geography.
- (b) Political Geography of the Modern World.
- (c) History of Geographical Ideas and Discoveries.
- (d) Geomorphology.
- (e) Climatology and Oceanography.
- (f) Urban Geography.
- (g) Anthro-po-geography.
- (h) Dissertation on any geographical problem approved by the Head of the Post-Graduate Department of any affiliated college.

Add under books recommended under (a) Economic and Commercial Geography— “आर्थिक और वाणिज्य भूगोल” by C. B. Mamoria.

APPENDIX K

(Ref. Fac. of Arts Res. No. 9 of Nov. 5, 1958)

Minutes of a meeting of the Board of Studies in Mathematics held on 9th and 10th May, 1958 at 12.30 P. M. and 8 A. M. respectively at the University Office, Jaipur.

Present :

1. Dr. C. B. Rathie
2. Dr. N. D. Gautam
3. Shri Balak Ram
4. Shri S. R. Mital

Convener .

1. The Board recommended courses of study in Mathematics for the following examinations (*vide Appendices*).

(a) Pre-University Course Examination (*Appendix I*).

(b) 1st year examination of the three-year degree Course.
1959 & 1960 (*Appendix II*).

(c) 2nd year examination of the three-year degree course.
1960 & 1961 (*Appendix III*).

(d) Final year examination of the three-year degree course.
1961 & 1962 (*Appendix IV*).

2. (a) *Resolved to recommend* that the courses of study for the B. A. & B. Sc. examinations of 1961 be the same as for the examinations of 1960.

(b) *Resolved to recommend* that the existing courses of study for the M. A. & M. Sc. examinations be repeated for the examinations of 1961, except with the modifications given *vide Appendix V*.

3. Under Section 34 (4) (iv) of the University Act, the Board elected Dr. C. B. Rathie to serve on the Committee for selection of examiners in Mathematics.

4. The Board revised the panel of examiners for 1958-59.

5. The Board went through the question papers set for the examinations of 1958 and offered the following comments--

M. Sc. (P) Paper II. The questions were selected from the last two or three years papers which is not desirable at the Post-graduate level.

6. A panel of four persons, as required under Ordinance 135 for appointment of referees to examine the thesis (submitted for the award of Ph. D. degree) in the subject "Thermal Stresses in Solids" was recommended.

7. As decided in the meeting of the Conveners of the Boards of Studies in Economics, Geography and Mathematics, the Board of Studies in Mathematics recommended that there be one paper at the end of the second year also and two papers at the end of third year at the three-year degree course in Science. The syllabuses have been framed according to the above recommendation.

8. Owing to the growing importance of Statistics and in view of the absence of any Statistical Institute in Rajasthan, the Board recommended that there be a separate subject of Statistics in the three year degree course of this University as is done in other Universities.

S R. Mital
Convener

Appendix I

(Ref. B. O. S. in Maths. Res. No. 1 (a) of May 9 & 10, 1958)

Mathematics.

Pre-University Course

There will be two written papers of three hours each and 75 marks each.

1st Paper :—Algebra and Coordinate geometry.

Algebra :—Quadratic equations involving two or more unknown quantities. Theory of quadratic equations and expressions of the second degree. Surds and indices. Imaginary quantities and cube roots of unity. Arithmetical, Geometrical and Harmonical Progressions. Easy Problems on Permutations and combinations. Proof of Binomial Theorem for positive integral index. Theory of logarithms and the use of Binomial theorem for any index and of Logarithmic and exponential Theorems. Simple cases of partial fractions. Evaluation of easy determinants of third order.

Coordinate Geometry :—(Rectangular coordinates only).

Distance between two Points. Ratio Formulæ, Area of a triangle Locus, Equations of straight lines in the following forms :—

$$(i) y = mx + C$$

$$(ii) \frac{x}{a} + \frac{y}{b} = 1$$

$$(iii) X \cos L + y \sin L = p$$

$$(iv) Y - Y' = m(X - X')$$

$$(v) Y - Y' = \frac{Y'' - Y'}{X'' - X'}(X - X')$$

$$(vi) \frac{X - X'}{\cos \theta} = \frac{Y - Y'}{\sin \theta} = r$$

Angles between straight lines, length of perpendiculars from given points on given straight lines. Intersection of lines. Bisector of angles between straight lines. General equation of second degree (homogeneous and non homogeneous) representing two straight lines and Intersection of any curve with a straight line.

2nd Paper :—Trigonometry and coordinate Geometry.

Trigonometry :—Sexagesimal and Circular units of angular measurements. Trigonometrical ratio and their relations to one another. Trigonometrical ratios of sum and difference of angles. Transformation of products and sums. Trigonometrical ratios of multiple and sub-multiple angles. General expressions of all angles having the same trigono-

metrical ratios. Identities; Solution of simple trigonometrical equations. The relation between the sides and angles of a triangle. Properties of triangles and circles connected with them. Logarithms and their applications. Solution of triangles. Simple problems on heights and distances.

Coordinate Geometry :—

Equation of the circles in the following form :—

(i) Simple equation $x^2 + y^2 = a^2$

(ii) Central form $(x-k)^2 + (y-k)^2 = a^2$

(iii) General form $x^2 + y^2 + 2gx + 2fy + c = 0$

(iv) Diameter form $(x-x_1)(x-x_2) + (y-y_1)(y-y_2) = 0$

Intersection of a circle and a straight line. Tangents and normals. Chord of contact and Polars. Orthocentres of circles and radical axes.

Books recommended :—

1. Pre University Algebra—Pavate (Macmillan & Co.)
2. A New Algebra for Pre-University & Higher classes: R. C. Gour (Ramesh Book Depot, Jaipur 3/8/-)
3. Intermediate Algebra by Butt (S. Chand and Co.)
4. Trigonometry Part I by S. L. Loney (Macmillan)
5. Plane Trigonometry by Patni & M. C. Gupta (Ramesh Book Depot, Jaipur).
6. Coordinate Geometry Part I by Loney (Macmillan).
7. Coordinate Geometry by G. C. Patni & R. C. Singhvi (Ramesh Book Depot.) 3-12-0

Appendix II

(Ref. B. O. S. in Maths. Res. No. 1 (b) of May 9 & 10, 1958)

1st Year Examination of the Three Year Degree Course 1959-60.

There will be two papers of 3 hours each. Each question paper shall be divided into two parts and the candidates will be asked to attempt not less than two questions from each section.

Paper I Section A. Coordinate Geometry

 Section B. Calculus

Paper II Section A. Statics

 Section B. Dynamics.

Coordinate Geometry :

Paper I (a. COORDINATE GEOMETRY : Circle, Parabola and ellipse Rectangular Coordinates only).

(b) CALCULUS—Differential Coefficient. Geometrical Significance dy/dx and its application. Differentiation of a sum, product and quotient. Differentiation of x^n , e^{ax} , $\log ax$, function of a function and of simple trigonometrical circular functions, and of inverse functions. Integration of x^n , e^{ax} , $\log ax$ and of trigonometrical circular and inverse functions. Integration of a product by parts and simple cases of integration by substitution. Geometrical interpretation of a definite integral.

Paper II (a) STATICS—Co-planar forces, parallel & non-parallel forces and their composition; equilibrium of a body under three forces; moments; conditions of equilibrium of a body under a system of coplanar forces and simple examples; Centre of gravity; Friction; Work and Power; Simple Machines (lever, balance, systems of pulleys, wheel and axle.)

(b) DYNAMICS—Velocity; Composition of Velocities; Relative Velocity; Acceleration; Rectilinear motion under uniform acceleration; Composition of accelerations; Newton's Laws of Motion, Rectilinear motion under gravity in a vertical and down an inclined plane; motion of two masses connected by a string passing over a pulley; Projectiles; Direct impact of Smooth Bodies, definition and calculation of Kinetic Energy.

Note :—Calculus may be used.

The following books are recommended and not prescribed :—

1. Coordinate Geometry by S.L. Loney (Macmillan).
2. Coordinate Geometry by G. C. Patni and R. C. Singhvi
(Ramesh Book Depot, Jaipur).
3. Calculus by G. C. Patni and R. C. Gour
(Ramesh Book Depot, Jaipur).
4. The Intermediate Calculus by Dr. Brij Mohan.
5. Elements of Statics : S. L. Loney.
6. Elements of Dynamics : S. L. Loney.
7. Elementary Mechanics Pt. I Statics by R. S. Varma.
8. Elementary Mechanics Pt. II Dynamics by P. D. Shukla.

Appendix III

(Ref. B. O. S. in Maths. Res. No. 1 (c) of May 9 & 10, 1958)

Ind Year Examination of the three Year Degree Course 1960-1961

There will be one paper of three hours duration and of 100 marks. There will be three sections and candidates will be asked to attempt not less than one question from each section.

Section A :—TRIGONOMETRY—Inverse Trigonometrical Functions, De Moivre's Theorem, Summation of Trigonometrical Series, Hyperbolic Functions, Expansion of Trigonometrical Functions.

Section B :—DIFFERENTIAL CALCULUS—Limits, Continuity, Differentiation of a Function of a single Variable, Successive Differentiation, Rolle's Theorem, First Mean Val. Theorem (Lagrange's and Cauchy's Forms), Taylor's and Maclaurin's Theorems, Indeterminate Forms, Maxima and Minima for a Single Variable, Partial Differentiation, Tangents, Normals, Asymptotes, Double Points, Curvature, Envelope and Simple Curve tracing.

Section C :—INTEGRAL CALCULUS—Standard Forms. Methods of Substitution, Integration by Parts and Easy Reduction Formulae. Rectification of plane curves. Quadratures, Simpson's rules, Surfaces and Volumes of Solids of Revolution, Centre of Gravity.

Books Recommended :

Plane Trigonometry Pt. II by S. L. Loney.

Plane Trigonometry by Pyare Mohan.

Differential Calculus by Gorakh Prasad.

Integral Calculus by Gorakh Prasad.

Differential Calculus by Shanti Narayan.

Integral Calculus for beginners : J. Edwards.

Appendix IV

(*Ref. B. O. S. in Maths. Res. No. 1 (d) of Moy 9 & 10, 1958*)

There will be two papers each of 3 hours duration and each carrying 100 marks. Each paper will be divided into three sections and candidates will be required to attempt at least one question from each section.

Paper I :—

Section A :—COORDINATE GEOMETRY—Straight line,

Circle, Parabola, Ellipse, Hyperbola and the Reduction of the General Equation of the Second Degree to Standard Forms. (The above to be treated by rectangular and polar co-ordinates only).

Section B :—Algebra—Inequalities, Simple Continued Fractions; Elementary Theorems on Convergence and Divergence of Series, Binomial Theorem for any rational index; Exponential and Logarithmic Series; Partial Fractions, Easy Determinants with applications, General properties of equations; relation between roots and coefficients, Easy symmetric functions of the roots, Algebraic Solution of the cubic.

Section C :—DIFFERENTIAL EQUATIONS

Ordinary differential equations of the first order and first-degree; Clairaut's form and singular solution of the equations of the first order; Linear equations with constant coefficients.

Paper II :—

Section A :—Statics—Elementary idea of Vectors. Addition and subtraction of Vectors. General conditions of equilibrium of a particle and of a rigid body under the action of forces in one plane. Virtual work, Friction, Centre of Gravity, Common Catenary, Hooke's Law.

Section B :—DYNAMICS—Velocity and Acceleration, Newton's Laws of Motion, Work and Energy, Rectilinear, Motion of Projectiles in vacuum, Circular and Harmonic Motion. Simple and Cycloidal pendulums, Impact.

Section C :—HYDROSTATICS—Fluid Pressure, Pressure on immersed surfaces. Conditions of Equilibrium of a floating body, Centre of Pressure.

Books recommended:

- recommended :**
- | | |
|----------------------------|---|
| 1. Coordinate Geometry : | S. L. Loney (Macmillan) |
| 2. " " | Smith (Macmillan) |
| 3. " " | Gorakh Prasad & H. C. Gupta
(Pothishala) |
| 4. " " | Ramballabh |
| 5. Statics | : R. S. Varma |
| 6. " | A. S. Sinha |
| 7. Dynamics | : P. L. Srivastava |
| 8. " | Rawat |
| 9. " | M. Ray |
| 10. Hydrostatics | : B. N. Prasad |
| 11. " | M. Ray |
| 12. " | Ram Kumar |
| 13. Algebra | : J. C. Chaturvedi |
| 14. " | M. Ray & H. P. Sharma |
| 15. " | Hall and Knight |
| 16. Integral Calculus | : Gorakh Prasad |
| 17. Differential Equations | : Murray. |

Appendix V

(Re) *B.O.S. in Maths. Res No. 2(b) of May 9 & 10, 1958)*

M A , M.Sc. Mathematics 1961.

(Add after the optional paper X of M.A. & M.Sc. Final examination).

XI Electricity and Magnetism.

Electricity and Magnetism—Properties of potentials, Lines of force, dielectrics, condensers and conductors, images, application of methods of inversion and spherical Harmonics to electrostatic problems, steady currents in linear conductors.

Permanent and induced magnetism, the magnetic field produced by electric currents, induction of currents in linear circuits.

Book recommended :—

Ramsay : Electricity and Magnetism.

XII Relativity :

Relativity—Michelson and Morley's experiment, Lorentz transformation, Fitzgerald contraction. Hamilton's principle. Mass, Momentum and Energy, Minkowski's 4-dimensional world, Principle of equivalence, Contravariant and covariant vectors multiplication, contraction and quotient law of tensors, transformation. Fundamental tensors, associated tensors. Christoffel's—3 Index symbols. Geodesic, covariant differentiation, Riemann Christoffel tensor.

Condition for flat space time, Einstein's law of gravitation, field of an isolated particle, Schwarzschild's solution, planetary orbits.

Books suggested :

R. C. Tolman : Relativity. Thermodynamics and Cosmology.

Eddington : Relativity.

Coff : Relativity.

APPENDIX L

(*Ref. Fac. of Arts Res. Nos. 12 & 19 of Nov. 5, 1958*)

Minutes of a meeting of the Board of Studies in Drawing and Painting held on 9th & 10th May, 1958, at 12.30 P. M. and 8 A. M. respectively, at the University Office, Jaipur.

Present :

1. Shri R. V. Sakhalakar
(Not present on 10th May)
2. Shri P. N. Choyal
3. Shri I. A. Motiwala
4. Shri B. C. Gue
5. Shri S. M. Sharma
(*Convener*)

1. The Board recommended courses of study in Drawing & Painting for the following examinations (*vide Appendix I*).

- (a) Pre-University Course Examination
- (b) 1st year examination of the three-year degree course, 1959 & 1960.
- (c) 2nd year examination of the three-year degree course 1960 & 1961.
- (d) Final year examination of the three year degree course, 1961 & 1962.
- (e) Honours Courses (*Appendix II*).

2. Resolved to recommend that the courses of study for the B. A. Examination of 1961 be the same as for the examination of 1960, except with the modifications given *vide Appendix III*.

3. Under Section 34 (4) (iv) of the University Act, the Board elected Shri I. A. Motiwala to serve on the Committee for selection of examiners in Drawing & Painting.

4. The Board revised the panel of examiners for 1958-59.

5. The Board went through the question papers set for the examinations of 1958 and offered the following comments:—

Paper 1st B. A. Examination 1958.

Part (b) is not in keeping with the syllabus. This mistake has

been repeated by the same examiner for the second time. In this paper sketches are unnecessary in instructions to Superintendent.

Paper 2nd B. A. Examination 1958.

(Question 1) The examiner should send descriptive plan and pictorial diagram of the objects.

6. The Board *resolved to recommend that* the minimum qualifications for teachers required for teaching degree classes as appeared in the minutes Volume XX (January 1957 to June 1957 Page 117) should be as follows :—

- I. Diploma in painting from any recognised institution with Matric as minimum qualification.
- II. B. A. with Drawing & Painting having secured 1st class marks in Drawing & Painting with 5 years teaching experience of the Intermediate in the subject.

S. M. Sharma
Convener.

Appendix I

(Ref. B. O. S. in *Drawing & Painting Res. No. 1 of May 9 & 10, 1958*)

Pre-University Course.

DRAWING.

There will be one paper of 3 hours duration, carrying 100 marks.

DESIGN.

Decorative design, within circles, square, triangle, hexagon for running borders, including flowers leaves, birds and animals.

Size not less than 6".

Medium. Water colour and tempera.

Three Years Degree Course

Note :—Private candidate shall not offer this subject.

First Year Examination.

There will be one paper of 3 hours duration, carrying 100 marks.

'STILL-LIFE'.

A group containing not less than 3 objects, and not more than five, which will include common objects of every day use i. e. vase, metal vases, flowers, fruits, with a flat background, and showing some portion of the foreground.

Medium :—Water colour or Tempera.

Second Year Examination.

There will be one paper of 3 hours duration carrying 100 marks.

'DRAWING FROM LIFE'.

Study from full figure, (Male) in different poses. In pencil shading broad masses of light and shed.

Size—not less than 8" in length.

Final Examination.

There will be two papers of 3 hours duration carrying 100 marks each.

Paper I—Pictorial composition.

Composing a picture, with not less than 3 figures (including human and animal) on a simple subject from every day life.

Medium—Water colour or tempera.

Paper II—History of Indian Painting and Sculpture.

History of Indian painting and Sculpture from the earliest to the present day including primitive art. Mahajodra and Harrapa, Jogimara, Ajanta, Bagh, Sigeria, Jain Painting, Rajput school and after time Moghal, Maurya, Sung, Mathura etc.

Books recommended :

1. Indian Painting by Percy Brown.
2. भारतीय की चित्र कला by Rai Krishna Das.
3. भारतीय मूर्ति कला by Rai Krishna Das.

Books for Reference :—

1. Handbook of Indian Painting by E. B. Havell.

Appendix II

(Ref. B.O.S. in Drawing & Painting Res. No. 1 (e) of
May 9 & 10, 1958)

B A. (Honours)

Drawing & Painting.

(All the papers will be of 3 hours duration of 100 marks each).

Paper 1 Still Life.

„ 2 Drawing from life.

„ 3 Pictorial Composition.

„ 4 History of Indian Painting & Sculpture.

„ 5 Portrait painting (Head).

„ 6 Sketches from life.

„ 7 Design.

„ 8 Land scape painting.

Details of the different papers.

Paper 1.

No. 1, 2, 3 and 4 same course as three years degree course.

Paper 5. Portrait painting (Head study from life in water colour).

Paper 6. Sketches from life. Three different poses, in pencil or pen, or brush size approximately 9" length.

Paper 7. Design. Suitable for embroidery or Textile, to be completed in water colour or temptra.

Paper 8. Landscape painting. A simple spot to be chosen, as far as possible near the centre of examination. The examiner will actually explain the spot to candidates and be present on the spot.

Medium—Oil colour.

Size 10"×14".

N. B. Oil painting canvas boards, are to be supplied by the University.

Appendix III

*(Ref. B.O.S. in Drawing & Painting Res. No. 2 of May
9 & 10, 1958)*

B. A. Examination of 1961

The course will be the same as for the B. A. examination of 1960 except the following changes :—

(1) There will be the paper of only History of Indian Painting and Sculpture, which will not include "Art Appreciation". The course for History of Indian Painting and Sculpture will be the same as prescribed for the Final year of the 3 year's Degree Course Paper II.

APPENDIX M 1

(*Ref. Fac. of Arts Res. No. 19 of Nov. 5, 1958*)

Minutes of meetings of the Sub-Committee appointed by the General Education Committee to recommend courses in General Education held on Monday the 5th May, 1958 at 12.30 p. m. at the University Office and on Tuesday the 6th May 1958 at 9.30 a. m. at the residence of prof. M. V. Mathur.

Present :

1. Dr. M. L. Sharma
2. Principal C. B. Gupta
3. Prof. M. F. Soonawala
4. Prof. M. V. Mathur

(*Convener*)

I. The Sub-Committee took into consideration the report of Government of India's Study Team on General Education, the recommendations of Regional Conference on General Education held at Aligarh regarding syllabus in General Education, and the prospectuses of some Indian Universities collected by the University Office. The Sub Committee also noted the contents of a letter received from the Registrar, Aligarh Muslim University regarding compilation of teaching material in General Education. The Sub-Committee was handicapped in its deliberations by the absence of 2 experts on General Education, namely Dr. P. Maheshwari (Delhi University) & Dr. Baljit Singh (Lucknow University) who had been specially invited by the University to attend these meetings. The Sub-Committee could not get much help from the syllabi in General Education of other Universities. However, the Sub-Committee consulted a number of books on topics relating to General Education and resolved to recommend as follows :—

- (1) The Pre-University course in General Education should be the same as had been prescribed by the University earlier for I. Com. Examination, i. e., it should consist of partly of 'General Science' and partly of 'Social Studies'. There will be one paper carrying 100 marks. The University's publication entitled 'Samanya Gyan' should be the recommended text book for this course.
- (2) That the Three-Year Degree Course in General Education to be started in July, 1958 for Higher Secondary Students should

be as follows :—

**Three Year Degree Course in General Education
(For B.A., B.Sc & B. Com.)**

FIRST YEAR EXAMINATION, 1959.

There will be one paper carrying 100 marks. The paper will be divided into two sections—Natural Sciences and Social Sciences as given below :—

Natural Sciences :

1. Evolution of the Earth.
2. The Exterior and interior of the Earth.
3. Work, energy and power.
4. Matter.
5. Atomic nuclei and atomic-energy.
6. Building of molecules.
7. Uniqueness of carbon.
8. Characteristics of living organism.
9. Structure of the cell.
10. Nutrition.
11. Plant and animal metabolism.
12. Reproduction.

Social Sciences.

1. *History of Social Evolution :*

- (a) Early processes. Primitive societies. Origins of Social institutions, principal factors in social growth. Role of Technology.
- (b) Development of civilisation and culture. Salient features of Ancient and Mediaeval Civilisations e. g. the River Valley civilisations, Ancient Chinese, Greco-Roman, Arab and Mediaeval European civilisations).
- (c) Patterns of Economic organisation (Pre-Industrial).
- (d) Major Political ideas.

2. *Heritage of India :—*

- (a) Indus Valley Civilisation and the coming of the Aryans—Vedic age synthesis of Aryan and pre-Aryan cultures—caste and social institutions. Buddhism and Jainism—social and cultural significance

(b) *Classical Indian Civilisation :—*

- (i) Government and Society.
- (ii.) Intellectual and cultural attainments.
- (iii) Cultural Relations with foreign countries.
- (c) The Turkish conquest—The impact of Islam.
- (d) Government and society in Medieval India.
- (e) Growth of a Composite Indian culture.
- (f) Disintegration of the Mughal Empire and the British conquest of India—Factors and processes.
- (g) British Indian Administration.
- (h) Social and Religious Movements.
- (i) National Movement (1857–1957).

Books recommended :

1. Samanya Vigyan.
(Rajasthan University Publication)
2. Samajik Adhyayan.
(Rajasthan University Publication)

Supplemented by :

1. History of Science : A Symposium.
(Cohen & West).
 2. F. Sherwood Taylor : A short illustrated History of Science.
(Heinmann).
 3. K. M. Pannikar : A survey of Indian History.
(Some additional books will be suggested
by Dr. M. L. Sharma).
3. Second Year of The Three Year Degree Course, 1960.

GENERAL EDUCATION

Second year Examination of 1960

One paper carrying 100 marks.

The paper will consist of 2 sections as given below :—

Natural Sciences :

1. Science in Antiquity.
2. Contributions of Ancient India to Science.
3. Copernicus and the planets.

4. Bacon and the experimental method.
5. Galileo and Kepler.
6. Harvey's discovery of the circulations of the blood.
7. The development of Scientific instruments in the 17th Century : Microscope, Telescope, Air pump, Thermometer, Barometer, Pendulum clock.
8. Newton and his contributions.
9. Concept of Evolution and Darwin's theory.
10. (a) Mendel's concepts of Heredity.
(b) Birth of genetics.
11. Discoveries of Pasteur and Koch.
12. Some important Scientific discoveries of the 19th Century : Dynamo and motor, Wire-less, Electron X-Rays, Synthetic dyes.
13. Modern Scientific developments : Radio-Activity, Atomic Energy : Plastic and synthetic fibres, Antibiotics, Viruses.
14. The Scientific Method.
15. The impact of Science on Modern life.

Social Sciences :

1. *Problems of Economic Development.*
 - (a) The Industrial Revolution.
 - (b) Problems of Economic organisation in the modern world
 - (c) Capitalism, Socialism planning and welfare-economics. The economics of Imperialism and Colonialism.
 - (d) Economic problems of the under-developed regions.
 - (e) International Economic Cooperation.
2. *Problems of Political Organisation :*
 - (a) Basic concepts of Liberalism and Socialism. Principles of Democratic Organisation. Main types of Constitutions—Unitary, Federal, Presidential and Parliamentary.
 - (b) Modern Imperialism and Imperialist conflicts. The resurgence of Asia.
 - (c) International Organisation—The U. N. Charter—The U. N. and its subsidiary Organisations—Maintenance of World peace.

3. *Problems of Modern India :*

- (a) The Indian economy—Five Years Plans—Planning and Democracy.
- (b) Indian Constitution—Problems of Federal Policy—Public Administration Regionalism, Nationalism.
- (c) The problems of Cultural Regeneration—growth of composite culture.

Books recommended :

The following in addition to the books recommended for the First Year Course :

- 1. F. Sherwood Taylor : World of Science.
(Publisher Heinmann).
- 2. Westaway : The Endless Quest : Three Thousand years of Science. (Blackie, 1934, 21 s.).
- 3. R. C. Majumdar : Advanced History of India.
(for teachers).
- 4. Nilkant Sastri : History of India.
(for teachers).

(Some additional books will be suggested by Dr. M. L. Sharma).

4. Third Year of The Three Year Degree Course, 1961.

GENERAL EDUCATION

The final year's course in General Education will not include the study of any prescribed books. There will be one paper on 'General Essay' carrying 100 marks. The General Essay paper will consist of 2 short essays in Hindi or English on the subject of General Education (as recommended earlier by the Faculty of Arts Committee). Each college will arrange for a weekly Seminar on General Education, besides some tutorials for writing general essays. In the weekly Seminars, topics relating to the courses in Natural Sciences and Social Sciences already covered in the first 2 years should be discussed in a more comprehensive manner. It is expected that all the teachers handling General Education courses will guide the Seminars discussions.

II. The Sub-Committee postponed consideration of other items on the agenda. The Sub-Committee, however, *resolved that* the 3 years degree course to be started in July, 1958 should include something about Humanities also in the General Education course.

III. The Sub-Committee recognized that the success of the General Education Courses will depend upon proper arrangements for their teaching. The Committee further recommended that the University, in conjunction with the Government of Rajasthan and the University Grants Commission and the Ministry of Education, Government of India, should convene a conference of all those teachers in affiliated colleges who are expected to teach this course. In a conference or Seminar of this type it will be possible to acquaint the teachers concerned with the objectives of this course and the approach that should be followed in teaching the same.

IV. The Sub-Committee adjourned after authorising the Convener and Dr. M. L. Sharma to make any further recommendations on behalf of this Sub-Committee, in connection with the Education Courses to be started in July, 1958.

M. V. Mathur,
Convener.

APPENDIX M2

(Ref. Fac. of Arts Res. Nov. 19 of Nov. 5, 1958)

Minutes of a meeting of the Sub-Committee appointed by the General Education Committee to recommend Courses in General Education held on Monday, the 8th September, 1958 at 1.00 P. M. in the University Office, Jaipur.

Present :

1. Dr. M. L. Sharma.
2. Principal C. B. Gupta.
3. Prof. M. F. Soonawala.
4. Prof. M. V. Mathur

(Convener).

The Sub-Committee reviewed the syllabi and Text-books in General Education for first year/second year and final year examinations of the Three-Year-Degree Course for the years 1960, 1961 and 1962, respectively after taking into consideration Dr. P. T. Raju's letter together with the recommendation of the Board of Studies in Philosophy regarding Courses in General Education, and the Ministry of Community Development's (Government of India, New Delhi) letter dated the 24th October, 1957 regarding inclusion of Community Development Programme in University Courses, and resolved to recommend as follows.

1. That the following be added to the course prescribed earlier for the first year examination under Social Sciences :

(a) Add between "History of Social Evolution" and "Heritage of India" :

—Religion & Philosophy; outlines of Hinduism, Buddhism, Jainism, Christianity and Islam—their correlation—the fundamental unity of basic principles of religions; Vedanta and Sankhya. Principles of literature (Poetry and Prose) with suitable examples and universally accepted principles of literary appreciation.

(b) Add the following to the second year course prescribed earlier: Under paragraph 3 (a) of page 4 of the cyclostyled syllabus add "Community Development Programme".

The Sub-committee, however, felt that for bringing up proper co-ordination in the recommended syllabi it should have the advice of two

expert committees consisting of Dr. M. L. Sharma, Dr. Ramanand Tiwari (Bharatpur) and Prof. M. V. Mathur for Social Sciences (including religion and literature), and Prof. M. F. Soonawala, Dr. Daya Krishna (Jodhpur) and one other Science Professor for Natural Sciences. The Convener of the Sub-Committee should co-ordinate their work.

2. The Committee took into consideration Prof. M. V. Mathur's letter No. M-42/17 dated the 17th August, 1958 and recommended that the proposed seminar or conference should take place as suggested.

M. V. Mathur
Convener.

APPENDIX N

(Ref. Fac. of Arts Res. Nos. 11 & 19 of Nov. 5, 1958)

Minutes of a meeting of the Committee of Courses in Music held on the 8th and 9th May, 1958, at 12. 30 p.m. and 8.30 a.m. respectively at the University Office, Jaipur.

Present :

1. Mrs. Jai Lakshmi Dravid

2. Miss Sudha Saksena

(Convener)

1. The Committee recommended courses of study in Music for the following examinations (*Vide Appendix*).

(a) Pre-University Course Examination.

(b) 1st year examination of the three-year degree course, 1959 & 1960.

(c) 2nd year examination of the three-year degree course, 1960 & 1961.

(d) Final year examination of the three-year degree course, 1961 & 1962.

2. *Resolved to recommend* that the courses of study for the B. A. Examination of 1961 be the same as for the examination of 1960.

3. The Board revised the panel of examiners for 1958-1959.

4. The Board went through the question papers set for the examinations of 1958 and offered no comments.

5. It was *resolved to recommend* that a 'Board of Studies' in Music may be formed instead of the present 'Committee of courses' in Music as this subject has been introduced in degree classes.

S. Saksena
Convener.

Appendix

(Ref. Committee of Courses in Music Res. No. 1 of May 8 & 9, 1958)

Pre-University Examination.

INDIAN MUSIC

There will be two tests in Music, Viz., a three hours paper in Theory carrying 40 marks and a practical test (Vocal or Instrumental) carrying 60 marks lasting at least 30 minutes per candidate.

Candidates must pass separately in each of the tests, theoretical as well as practical. The following syllabus is prescribed :—

I THEORY

1. Sound (नाद). Its production and propagation. Timber Magnitude Pitch. Musical Sounds (श्रुति).
2. Swar (स्वर) Shudha and Vikrat (शुद्ध और विकृत), Vakra and Varjit Swar (वक्र और वजित स्वर)
3. Definition and characteristic of That (थाट) and a knowledge of the ten main That's of Northern Indian Music.
4. Rag (राग) Varna (वर्ण) (स्थाई, आरोही, अवरोही, संचारी)
5. Ashraya Rag (आश्रय राग), Pcorvang Vadi (पूर्वांग वादी) and Utranga Vadi (उत्तरांग वादी) Ragas.
6. 'Jati' of Raga (सम्पूर्ण, षाडव, त्रौडव और उनके प्रकार) and a general idea of the number of ragas derived according to the Jati of Raga.
7. Swaras of Rag-Vadi (वादी), Samvadi (सम्वादी), Anuvadi (अनुवादी), Vivadi (विवादी), Grah (ग्रह), Ansh (अंश), Nyas (न्यास)
8. Detailed knowledge of the 'Time Theory' of Ragas.
9. Rag Vistar, Tan, Botton, Alankar, Pakad, Arohi, Avarohi.
10. Elementary knowledge of the characteristics of Drupad Khyal (खयाल), Dhamar (धमार), Thumri (ठुमरी), Tappa (टप्पा), Tarana (तराना), Sargam (सरगम), Lakshangeet (लक्ष्मण गीत) and Dadra (दादरा).
11. Good and bad points of musician.

12. Elementary knowledge of the History of Indian Music with special study of the following personalities .—

Swami Haridas, Tansen, Amir Khusru, Pt. V. N. Bhattkhande and Pt. Vishnudegamber.

Theoretical knowledge of all the prescribed ragas and Talas.

*Note:—*In addition to the above course a brief knowledge of the historical evolution of the instrument (one offers) is required for candidates offering instrumental music.

Topic No. 10 "Elementary knowledge....." be replaced by elementary knowledge of the different types of Gat and Types of Baj (बाज) etc.

II PRACTICAL.

A Vocal Music.

1. To recognise Swaras and Ragas.
2. To sing Shudha शुद्ध and Vikrat विकृत Swaras स्वर
3. To know orally the bol to mark time with hands and to recognise the following talas when played on Tabla :—

Dadra, Kaharva, Ektal, Jhaptal, Chautal, Jhumra, Deepchandi, Dhamar, Ada Chautal and Tilwada (दादरा, कहरवा, एकताल, झपताल, चौताल, भूमरा, दीपचन्दी, धमार, आडा चौताल और तिलवाड़ा)

4. To sing Arohi Avarohi Pakad and Talbadh Sargam (आरोही, अवरोही, सरगम) of all the prescribed ragas.
5. To the accompaniment of Table to sing one slow Khyal (बड़ा खयाल) and one fast Khyal (छोटा खयाल) with at least three Alaps and Tanas in the following ragas :—

Kedar, Bihag (केदार, बिहाग)

6. To the accompaniment of Tabla or Pakhawaj to sing (a) Drupad with dogun (दुगुन) and Chogun (चौगुन) or (b) Dhamar with dogun (दुगुन) in the following ragas (Three compositions in all are to be learnt but not more than two from one group).

7. Tilak Kamod, Hamir and Malkaunsh (तिलक कामोद, हमीर और मालकौंस)

8. To sing a fast Khyal or Tarana with elementary Tanas in the following ragas :—

An elementary knowledge of the Rag-Visar is also required Bageshwari, Marwa, Jaunpuri Bhimpalasi.

8. *Ragas Prescribed :—*

Kalyan That	Hamir, Kedar (हमीर, कैदार)
Bilawal That	Bihag (बिहाग)
Khamaj That	Tilakkamod (तिलककामोद)
Kafi That	Bageshwari, Bhimpalasi (बागेश्वरी, भीमपलसी)
Asavari That	Jaunpuri (जौनपुरी)
Marva That	Marva (मारवा)
Bhairavi That	Malkaunsh (मालकौंस)

B. Instrumental Music.

One of the following instruments is prescribed for the practical examination :—

Sitar Sarod Israj Violin.

1. 2. 3. 4. Same as vocal music (Paractical) only singing may be replaced by playing.

5. To the accompaniment of table to play one vilambit gat (विलम्बित गत) and one fast gat (द्रुत गत) with at least three Todas and Jhala in the following ragas :—

Kedar, Bihag, Jaunpuri, Bageshwari.

6 To play one fast gat (द्रुत गत) with Todas and Jhala in the following ragas :—

Marwa, Tilakkamod and Hamir (मारवा, तिलककामोद और हमीर)

7. Alaps in the following ragas with special practice in Jod work and Jhala.

Bihag, Bhimpalasi, Malkaunsh (बिहाग, भीमपलसी, मालकौंस)
Instructions :

(1) 10 marks will be set apart for the general effect produced by the Music rendered by the candidate.

(2) 25% marks will be deducted if the candidate does not sing to the accompaniment of Tanpura and Tabla.

(3) The examination centres are required to provide a Tabla player.

(4) In allotting marks in the practical test in Instrumental Music the posture of the candidate and his manipulation of the Instrument shall be taken into consideration.

Books Recommended :—

Practical :

1. Kramik Pustak Malika—Pt. II and III by Pt. V. N. Bhattkhanda (Sangeet Karyalaya Hathras).
2. Tan Malika Pt. I & II by Raja Bhaiya Poonchwala (Golbolker and Sons, Gwalior).
3. Tan Sangrah by S. M. Ratanjbankar Taluqdar Press, Lucknow).
4. Sitar Marg by S. Bandopadbyaya Sangeet Karyalaya Hathras).
5. Sitar Shiksha by B. N. Bhatt (Sangeet Karyalaya Hathras).
6. Sitar Parts I & III by B. L. Bhimpura.
7. Saral Violin Parichaya Pt. I & II. by G. N. Goswami. (Goswami Printers, Narahi, Lucknow).
8. Sangeet Shiksha—Pt. I & II by S. N. Ratanjankar.

THEORY

1. Shastra Pravesh Pt. II & III (Pt. Bhattkhanda Sangeet Karyalaya, Hathras).
2. Sangeet Pradeep—Bulbul Mitra.
3. Sangeet Kammodi Pt. I & II Vikramaditya Singh Nigam.
4. Sangeet Shiksha Pt. I by Mahesh Narayan Saksena (Sangeet Karyalaya, Hathras).
5. Sangeet Prabodha—Amba Shanker Nagar (Ramesh Book Depot, Tripoliya Bazar, Jaipur).
6. Rag Prachiya—Pt. I—Harish Chandra Srivastava. (553 Yehiapur, Allahabad).

First Year of The Three Year Degree course

There will be two tests in Music, viz. a three hours paper in theory carrying 40 marks and a practical test (Vocal & Instrumental Music) carrying 60 marks lasting at least 30 minutes per candidate.

Candidates must pass separately in each of the tests theory as well as practical.

The following Syllabus is prescribed :—

I THEORY.

1. Geet Gandharava Gan.
2. Nibadha Gan and Anibadha Gan.
3. Detailed knowledge of the different types of Gats and types of Baj—(बज).
4. Shudha Swar Sthapna according to the length of the wire of the Veena and vibrations assigned to each Swara by Pt. Bhatt Khanda and Pt. Shrinivas.
5. 72 Thats of Pt. Vankatmakhi
6. 9 Jatis of Ragas and a detailed Knowledge of the number of Ragas derived from these Jatis.
7. Notation—Comparative study of the Notation system of Pt. Bhattakhanda and Pt. Vishnu Digambar.
8. Shudha Chayalag and Sankeerna Ragas.
9. General information of the progress of Music in the present age.
10. Life and contribution of the following :—
 1. Raja Bhaiya Poonchwala . 2. D. V Palushkar.
 3. Ustad Fyaz Khan. 4. Ustad Allaadin Khan.
11. Critical and comparative study of all the Ragas and Talas prescribed in the practical course.

*Note :—*In addition to the above course a detailed knowledge of historical evolution of the instrument (one offers) and a general idea of the different parts (अंग वस्त्र) of the instruments is required for candidates offering instrumental music.

II PRACTICAL.

A. Vocal Music.

1. To recognise some Swaras and ragas when sung.
2. To sing given Shudha or Vikrat Swaras.

3. To know (a) orally the Bol (b) to make time with hands with doguns and to recognise the following tals when played on tabla.

Jhaptal, Ektal, Trital, Chautal, Jhumra, Dhamar, Tilwada.

4. To sing Arohi, Avarohi, Pakad, Talbadh, Sargam (तालवद् सरगम) and elementary Swar Vistar of all the prescribed ragas.

5. Prescribed ragas :—

1. Kalyan That Shudha Klayna. Bhupali Gaurdsarang-
2. Bilawal That Deshkar Shankara.
3. Bhairav That Kalingda.
4. Purvi That Purvi.
5. Kafi That Bageshwari and Bhimpalasi.
6. Asavari That Jaunpuri.

6. To sing a slow Khyal and a fast Khyal with 5 Tanas and Alaps in the following ragas :—

Jaunpuri, Bagheshwari, Shudha Kalyan, Gaurdsarang.

7. To the accompaniment of Tabla or Pakhawaj to sing (a) Drupad with Dogun and Chogun or (b) Dhamar with Dogun in the following ragas (Three Compositions in all are to be learnt but not more than 2 from one group :—

Deshkar, Shankra, Bhimpalasi.

8. To sing to the accompaniment of Tabla a fast Khyal or Tarana with elementary Tanas and Alaps in the following ragas.

Purvi, Bhupali, Kalingda.

B. Instrumental Music.

One of the following instruments is prescribed for practical examination :—

Sitar, Sarod, Israj and Violin.

1, 2, 3, 4 & 5. Same as vocal music except singing is to be replaced by playing.

6. To the accompaniment of Tabla to play one Vilambit gat- (विलम्बित गत) and fast gat (द्रुत गत) with atleast 5 Todas and Jhala in the following ragas :—

Gaurdsarang, Shudha Kalyan Deshkar, Bhimpalasi, purvi.

7. To play one fast gat with Todas and Jhala (तोड़ा और झाला) Kalinga, Bhupali, Shankra.

8. Alaps in the following ragas with special practice in Jod work and Jhala जोड़ का काम और झाला Gaurdsarang, Purvi & Bhupali.

Books Recommended

Practical :

1. Kramik Pustak Malika Pt. II, III & IV.
Pt. V. N. Bhattkhandia.
2. Tan Malika II & III (Poorvardha)
Raja Bhaiya Poonchwala.
3. Tan Sangrah—S. N. Ratanjankar (Taluqdar Press, Lucknow).
4. Sitar Marg—S. Bhadrapadhyaya (Sangeet Karyalaya, Hathras).
5. Sitar Shiksha—B. N. Bhatt.
6. Sitar Parts I to III by B. L. Bhimpura.
7. Saral Violin Parichaya Pt. II by G. N. Goswamy (Goswamy Printers Narahi, Lucknow).

Theory :

1. Shastra Pravesha Pt. II & III (Pt. Bhattkhandia)
2. Sangeet Shastra I & II—Mahesh Narayan Saksena.
(Sangeet Karyalaya, Hathras).
3. Rag Parichaya—Pt. I & II—Harishchandra Srivastava
(553 Yehiapur, Allahabad).
4. Sangeet Pradeesh—Bulbul Mitra.
5. Rag Parichaya—(राग परिचय) Pt. I & II by Harish chandra
Shrivastava (553 Yehiapur, Allahabad)

Second Year of Three Year Degree Course

INDIAN MUSIC

There will be two tests in Music, viz., a three hours paper in Theory carrying 40 marks and practical test (Vocal or Instrumental) carrying 60 marks lasting at least 30 minutes per candidate.

Candidates must pass separately in each of the tests, theory as well as practical. The following syllabus is prescribed :

I THEORY

- I. A detailed history of Indian Music.
 - a) Detailed knowledge of the Ancient, Medieval and Modern age.
 - b) Evolution of Swaras.
 - c) Bharat Muni.
 - d) Pt. Sharangdev.
 - e) Amir Khusru.
 - f) Music during Age of Akbar, Jahangir, Shahjahan and Mohd. Shah.
 - g) New trends in Music in the 19th and 20th Centuries.
 - h) Pt. Bhattkhandia & Pt. Vishnu Digamber.
 - i) General information of the different music institutions in different Provinces.
 - j) *Steps taken by the Govt. of India for popularisation of classical Music.*
- II. Lakshan of Ragas and Jati.
- III. Modern Alap Gyan.
- IV. Swasthana Niyam.
- V. Tan.
- VI. General idea of the following :

Sthaya, Mukhchalan, Gamak, Parmel Pravesha Rag.

II PRACTICAL

A. Vocal Music

1. (a) To sing a piece whose Notation is given.
(b) To recognise the Ragas and Swaras when sung.
2. To show the difference of Ragas by means of characteristics Swar Vistars.
3. To know orally the Bol with Dugun to mark time with hands and to recognise the following Talas when played on Tabla.

Dadra, Kaharva, Ada Chautal, Teevra, Roopak.
4. To sing Arohi, Avrohi, Pakad and Swar Vistars of the prescribed Ragas.

5. Prescribed Ragas :

Kalyan That, Kamod, Chayanut, Hindol, Gaurdsarang,
Bilawal-That-Bihag, Khamag That-Gaud Malhar.

(Sometimes taken under Kafi That)

Bhairav That—Ramkali (भैरव थाट—रामकली)

Poorvi That—Paraj Shri Pooriya Dhaneshi. Basant.

Marva That—Marva.

6. To the accompaniment of Tabla to sing one slow Khyal and one fast Khyal with atleast 5 Tanas and Alaps in the following Ragas :

Chaya Nut, Kamod, Ramkali, Paraj, Marva.

7. To the accompaniment of Tabla or Pakhawaj to sing—

a) Drupad with Dugun. Chaugun and Tigun or

b) Dhamar with Dugun, and Chaugun in the following Ragas :

(Four compositions in all are to be learnt but not more than two from one group).

Hindol, Bihag, Gaud Malhar, Brindavani, Sarang.

8. To sing a fast Khyal or Tarana with Tanas and Alaps in the following Ragas :

Shri. Pooriya, Dhaneshri and Basant.

B. Instrumental Music.

1, 2, 3, 4 & 5 same as Vocal Music. Singing may be replaced by playing.

6. To the accompaniment of Table to play, one slow gat..... and one fast gat.....with atleast 7 Tocas and Jhala in the following Ragas :—

Kamod, Ramkali. Paraj, Marva. Brindvani, Sarang, Shri.

7. To the accompaniment of Tabla to play a fast Khyal with Toda and Jhala in the following Ragas :—

Basant, Chaya Nut and Gaud Malhar.

8. Alaps with special practice in Mend Work, Jod Work and Jhala in the following Ragas :—

Hindol, Puriya, Dhaneshri, Ramkali.

Books Recommended :—

In addition to the Books recommended for the First year of the

2. To show the difference of Ragas by means of characteristics Swar Vistars, and to sing Swar Vistars of all the Ragas and in Ragas prescribed for Drupad and Dhamar to sing Alap in *Nom ton* style.

3. To know orally the Bol with *dogun* and *chaugun* to mark time with hands and to recognise the following Talas when played on Tabla, Sool Tal, Panjabi, Theka, Ektal, Jhumra, Tilwara.

4. To sing Arohi Avrohi Pakad and Swar Vistar of the prescribed Ragas.

5. *Prescribed Ragas.*

Khamag That	Jajaiwanti.
Kafi That	Bahar Miyamalhar and Pilu.
Bhairav	Ramkali.
Marwa	Puriya Lalhit, Sohani.
Asavari That	Darbari and Addang.
Todi That	Multani Miyan-ki-Todi.
Bhairavi	Bhairavi

6. To accompaniment of Tabla to sing one slow Khyal one fast-Khyal with atleast 5 Tanas and Alaps, few Bol Tans & Sargams in the following Ragas :—

Jajaiwanti, Bahar, Miyan Malhar, Darbari Kanra, Puriya, Lalit.

7. To the accompaniment of Tabla or Pakhawaj to sing a Drupad with Dugon, Chaugun, Tigun and Chhaugun or (b) Dhamar with dugon and Chaugun and their Thehai in the following Ragas. (Three compositions in all are to be learnt but not more than two from one group).

Ramkali, Adana, Bhairavi.

8. To sing a fast Khyal or Tarana or Bhajan in the following Ragas.

Pilu, Sohani, Multani & Miyan-ki-Todi.

B. Instrumental Music.

1, 2, 3, 4, & 5 same as Vocal Music. Singing may be replaced by playing.

6. To the accompaniment of Tabla to play one slow gat and one fastgat with atleast 6 Todas and Jhala in the following Ragas.

Jajaiwani, Bahar, Miyan Malhar, Darbari Kanra, Puriya, Lalit.

7. To the accompaniment of Tabla to a play a fast Gat with Todas and Jhala :—

Sohani, Pilu, Bhairavi, Addana.

8. Alaps with detailed practice in Mend Work, gamak Zamzama Jod Work and different varieties of Jhala.

Ramkali, Multani and Todi.

Books recommended :—

Besides those prescribed for the First and Second Years of the Three Year Degree Course, the following may be added :—

1. Tan Malika Pt. III (Uttaradh) : Raja Bhaiya Poonchawala.
2. Hindustani Music—its physics and aesthetic by G. S. Ranade.
(Sangeet Karalaya, Hathras).
3. Music of Hindustan—Fox Strangeways.
4. Origin of Ragas by Bandhu-Upadhaya.
5. The Music of India by H. A. Popelay.

APPENDIX O

(Ref. Fac. of Arts Res. No. 19 of Nov. 5, 1958)

Minutes of a meeting of the Committee of Courses in Home Science held on 7th and 6th May 1958, at 12.30 p.m and 1 p.m. respectively at the University Office, Jaipur.

Present :

1. Mrs. S. Rastogi
2. Mrs. S. Sirin
3. Miss P. B Menon

(Convener)

1. The Committee recommended courses of study in Home Science for the following examinations (*vide appendices*).

- (a) Pre-University Course Examination (*Vide Appendix I*).
- (b) 1st year examination of the three-year degree course, 1959 & 1960. (*Vide Appendix II*).
- (c) 2nd year examination of the three-year degree course 1960 & 1961. (*Vide Appendix III*).
- (d) Final year examination of the three-year degree course, 1961 & 1962. (*Vide Appendix IV*).

2. Resolved to recommend that the courses of study for the B.A. Examination of 1961 be the same as for the examination of 1960, except with the modifications given (*Vide Appendix V*).

3. The Committee revised the panel of examiners for 1958-59.

4. The Committee went through the question-papers set for the examinations of 1958 and offered no comments.

5. Resolved that, as there are no practicals in the B. Sc. and B.A. classes for Home Science, the existing course be continued with the suggestion already made, and omitting the practical part and consequently the matter of equipments for the kitchen etc.

P. B. Menon
Convener.

Appendix I

(Ref. Committee of Courses in Home Sc. Res. No. 1 (a) of May 6 & 7, 1958)

Home Science (3 years course)

The subject for convenience, is divided into four sections :

- A. Physiology, Hygiene, Bacteriology and First-aid and Home-Nursing.
- B. Food and nutrition.
- C. Mother Craft and Child development.
- D. Home Management and House Craft.

Examination Scheme :

(1) At the end of the first year there will be one theory paper of three hours duration carrying 100 marks.

(2) At the end of the second year, there will be one theory paper of 3 hours duration carrying 60 marks and a practical test of 40 marks; of this 40 marks, 10 marks will be reserved for the session at work in the class, the records, files materials done in the needle work class under clothing have to be produced. The practical will be only in First-aid, Home nursing, mother craft and needle work and tailoring (6 hours duration). It is essential to secure minimum pass marks in the theory and practicals separately, for passing the examination.

(3) At the end of the final (3rd) year, there will be two theory papers covering the whole of the portions studied in all the 3 years; each paper will be of three hours duration carrying 75 marks each. There will be practical examination (6 hours duration) carrying 50 marks. (10 marks reserved for sessional work). This practical will include only nutrition and cookery, home-management and laundry. Candidates should secure minimum pass marks in the practical test and in the aggregate of the two theory papers.

Theory Paper—I will be on Section A & B. and

Theory Paper—II will be on Section C & D.

Syllabus for the Pre-University Course in Home Science :

There will be only one paper of 100 marks and 3 hours duration, divided into three sections viz. (1) Physiology, Hygiene & First-Aid, (2) Mother Craft and Child Development and (3) House-hold management and nutrition.

Section I. *Physiology & Hygiene, and First-Aid :*

Physiology :

1. A general study of the structure of the human body. The cell—the elementary tissues—the organs and the system of the body.
2. The skeleton—an outline study of the bones of the skeleton (technical names of only the main bones of the body to be learnt).
3. The joints and muscles—Varieties of joints with common example. Examples in the body. Structure of moveable joints; ligaments and tenders. Varieties of muscles and their actions.
4. The blood—Composition, function. Clothing of blood.
5. Circulatory system :
 - (1) Heart—its structure.
 - (2) The blood vessels—arteries, an capillaries.
 - (3) The course of circulation through the body and its purpose blood pressure and pulse.
 - (4) The lymphatic system—Tissue, fluids, lymph, lymphatic vessels and glands spleen—structure and function.
6. The Respiratory system—Organs of respiration—The purpose and mechanism of breathing. Composition of inspired and expired air.
7. The digestive system—(Food needs of the body and classes of food stuffs will be studied under nutrition). The organs and process of digestion—absorption and assimilation of food.
8. The excretory system :
 - (1) The organs of excretion.
 - (2) The urinary system—Kidneys, ureter, bladder, their structure and function. Mechanism of urine formation, composition of urine.
 - (3) The skin—structure and function, regulation of body temperature.
9. The nervous system :
 - (1) The Central nervous system—brain and the spinal cord.
 - (2) The peripheral nervous system—the nerves.

- (3) Automatic nervous system—sympathetic and para sympathetic.
 - (4) The sense and sense organ—eye—structure and function, defects of vision, care. Ear, nose and tongue—structure and function and care skin as a sensory organ.
10. The endocrine system. Elementary knowledge of the function of Pituitary, adrenals, thyroid, para-thyroid, thymus, gonads, and pancreas.

Hygiene :

1. Air and Ventilation. Composition of air, impurities in air and their effects on health.

Meaning of ventilation, effects of defective ventilation and over-crowding. Ventilation of homes and public buildings with special reference to India.

2. Water and its supply—Composition of water, sources of water supply; Impurities in water their sources and effects on health. Hard and Soft water. Methods of purification of water—domestic and on a large scale.

3. Personal hygiene—

(1) Cleanliness and care of skin, hair, nails, teeth, eyes, nose and ears.

(2) Breathing habits.

(3) Posture.

(4) Habits with regard to eating, drinking and smoking, Bowel-habits.

(5) Exercise, rest, sleep, recreation,

(6) Clothing.

(7) Social customs affecting health.

4. Infection—(i) Bacteria—Useful and disease producing, Transmission of infection.

(ii) Study of the following infectious diseases, their cause, symptoms, method of transmission, prevention and arrest. Small-pox, chicken-pox and measles.

First-Aid treatment in connection with the following—Burns and Scalds. Cuts and wounds. Haemorrhage. Sprain, fractures and dislocation. Drowning, Heat-stroke, Bites and stings. Unconsciousness-fainting. Fits and convulsion. Common poisons and their anti-dotes.

Care of the sick— with special emphasis on the care and isolation of an infectious case at home. Cold, influenza, diphtheria, whooping cough, enteric fever, cholera, dysentery, diarrhoea, poliomyelitis (infantile paralysis) tuberculosis, Malaria and Plague. Disinfectants and practical methods of disinfection. Modern movements for the education of society in the laws of health.

Section 2. *Mother-Craft and Child-Development :*

Mother-Craft :

1. Elementary study of the reproductive organ.
2. Physiology of reproduction.
3. Physiology and hygiene of menstruation.
4. Physiology of pregnancy.
5. Care of the pregnant mother with special reference to diet, fresh air, sun-shine, clothing, cleanliness, rest, exercise, mental outlook during this period. Anti-natal clinics.
6. Preparation for the birth of the child in the house. Maternity houses and hospitals.
7. Care of the mother during puer-perium.
8. Post-natal care.

Care of the child :

1. Feeding.
2. Clothing.
3. Formation of healthy habits with regard to eating, sleeping, elimination, exercise, play, etc.
4. Health protection—vaccination and inoculation.
5. Treatment of minor ailments.
6. Modern movements for child and maternal welfare.

Child Development :

1. Heredity and environment of the child. Original nature and its possibilities of modification. Methods of modifying original nature.
2. Conditions of habit formation. Training in good habits and breaking up of bad habits, character formation and training in social adjustments.
3. Feelings and emotions—training of emotion in a child, the motivation; training of the imagination of the child

4. Intelligence and learning. Nature of intelligence. Sense training. Concepts formation. Laws of learning. Condition of good memory and training in memory.
5. Hobbies and play activities :
 - (a) Toys and their utility.
 - (b) Organised games.
 - (c) Unorganised games.
 - (d) Stages in the growth of play activities.
6. Backward and pre-cocious children. Their characteristic and their behaviour. Problem children and training them.
7. Modern methods of education—
 - (1) Play-way method.
 - (2) Montessory method.
 - (3) Kindergarten System.

Section 3. *House-hold management and Nutrition :*

1. Principles of Household management, Health. Domestic-economy and Dietetics.
2. *Home*—arrangement and decoration Choice of the house and site, cleanliness of the home, arrangement of the rooms—daily, weekly and seasonal cleaning; Disposal of Refuse and sewage. Interior decoration; Furniture; Colour-schemes; Exterior appearance and decorations, Pre-cautions against house-hold pests.
3. Planning of the House-hold duties :

For wives who stay at home and for those who are employed in service.

Management of servants. Rest, recreation and social contacts. Social service activities. Useful hobbies. Care of the children and the aged; care of domestic animals and pets.
4. Domestic Economy—Wants, necessities and luxuries. Income and expenditure. Family budgets and keeping of accounts. Savings and their proper investments. Marketing and purchase of household supplies. Methods of storage and preservation of perishable and non-perishable provisions. Knowledge of the facilities offered by post-office. Railways and Banks.
5. *Family :*

Human needs and conditions that frustrate them.

Advantages and disadvantages of joint-family system.

Family adjustments and obligations as a daughter, sister, wife, sister-in-law, daughter-in-law and as a mistress of the household.

Obligations to the community as a citizen, Marriage and the many problems connected with it.

6. Nutrition—

i. Food : its importance.

Physiological classification of food. Constituents of food—their sources and importance.

Meal—planning according to age, occupation, income-level etc.

ii. Diets : Balanced-diet, its importance.

Diets for—infants, children, school-going children and for the aged.

Diets during pregnancy and lactation.

Diets for the invalid.

Malnutrition : Causes, signs of detection and dietetic cures.

iii Cookery : Effects of cooking. Principles of cooking. Methods of cooking. Retention of food-value in cooked foods. Importance of raw fruits and vegetables. Place of salads in the menu. Kitchen-hygiene and food-poisoning,

Principles and methods of preservation of foods.

7. Duties of the Hostress—

Etiquette and manners. Entertaining guests, hospitality. Decoration, presentation and serving of food.

Appendix II

(Ref. Committee of Courses in Home Sc. Res. No. 1
(b) of May 6 & 7, 1958)

Home-Science—First Year

Section A : *Hygiene Bacteriology, Home-Nursing & First-Aid*

Hygienic principles to be taught in relation to the physiology of the Human body.

1. *Hygiene of the Respiratory system :*

Purpose and mechanism of breathing.

Exchange of gases in the lungs and tissue.

Composition of inspired and expired air vital capacity and its significance.

Regulation of breathing.

Proper breathing habits—breathing through the nose, effects of mouth breathing.

Deep-breathing—Ventilation of lungs. Breathing exercises.

Importance of correct posture and loosely fitting clothes for proper expansion of lungs.

2. *Food & Nutrition :*

Food and its constituents (dealt under Section B 'Nutrition and Cookery')

Digestion, absorption and metabolism of proteins carbohydrates and fats.

Food storage in the body.

Formation of proper breathing.

Balanced and regular meals—food facts. Proper chewing of food and other habits—Avoidance of over-eating and abuse of tea, coffee and alcohol.

Digestive-disorders—cause and prevention. Indigestion, Constipation, Diarrhoea, obesity, mal-nutrition.

Stimulants and Intoxicants—their effects on various systems of the body.

3. *Hygiene of the Vascular system :*

(I) Blood : its composition and functions.

Coagulation of blood.

Haemorrhage-immediate and remote effects.

Blood-transfusion-Blood-grouping and blood-bank;

Anaemia-causes and prevention.

(ii) Heart & circulation :

Structure and function of heart. Arteries, Capillaries and veins. Purpose and course of circulation through the body.

Arterial Blood-pressure and Pulse.

Regulation of blood-supply.

Weak-heart and its limitations.

Varicose-veins.

(iii) Lymphatic system :

Tissue-fluid and Lymph.

Lymphatic vessels and glands.

Spleen-structure and function.

4. *Hygiene of the Urinary system :*

Organs forming the urinary system. Structure & function of the kidney. Secretion of urine and its composition. Regulation of volume of urine.

Effects of diet, fluids, stimulants, exercise, climatic conditions etc.

5: *Hygiene of the skin:*

Structure and functions of the skin.

Body Temperature—

Heat-production and Heat-loss. Regulation. Response of body to low and high environmental temperatures. Cleanliness and care of skin.

Bathing-kinds of baths. Protection from sun, wind, frost and irritants.

Skin-parasites of man and diseases caused by them-Lice, Itch-mite, Bed-bug-flea etc.

Other infections for the skin and their prevention.

Ringworm fungus, oriental sore, prickly heat, acne, boils and abscesses.

6. *Hygiene of the teeth :*

Milk and permanent teeth. Classes of teeth and Structure.
Cleanliness and care of teeth.

Dental caries—causes and prevention.

7. *Hygiene of the skeletal system :*

The Human skeleton and its functions.

Peculiarities of the child's skeleton.

Factors necessary for formation of strong bones.

Posture—correct and faulty.

Effects of faulty posture.

8. *Hygiene of joints & muscular system ;*

Types of joints found in the body illustrated by common examples.

Structure of a joint.

Varieties of muscles—skeletal, smooth, heart—their function.

Levers of the body.

Value of Muscular Exercise—Types of exercise.

Effects of training.

Strenuous exercise.

Fatigue, Rest and sleep.

9. *Hygiene of the Nervous system :*

Cerebrospinal Nervous System—

Brain, Spinal-cord and Nerves.

Voluntary and reflex-actions.

Autonomic Nervous System—

Sympathetic and Parasympathetic.

Mental Hygiene—Psychoneurosis, Hysteria.

10. *Hygiene of the Sense Organs :*

(i) Eye : Structure and functions of the eyes—Vision—
Normal—Accommodation—Defects of vision and
their correction by suitable glasses. (Myopia,
Hypermetropia, Astigmatism presbyopia, Squint,
(colour-blindness)—

Care of the eyes.

Causes and avoidance of eye-strain. Cleanliness.

Common eye-affections—Causes and prevention.
Conjunctivities, Trachoma.

(ii) Ear : Structure and functions (hearing and sense of balance and position).

Causes of deafness—Hearing-aids.

Care—

Causes of ear-discharge--infections of the ear.

(iii) Organs of taste and smell—

Structure, functions and care.

11. *Endocrine System :*

Elementary study of the following endocrine glands in relation to—position in the body.

Hormones produced and their role in life.

Symptoms produced by over and under activity.

Pituitary, Thyroid, Parathriod, Adrenals, Thymus, Gonad and Pancreas.

12. *Clothing and Shoes :*

Materials and their suitability in different climatic conditions.

Construction of dress-fitting and design keeping in view of comfort, convenience and needs of growth.

13. *Social customs affecting health :*

Child-marriage.

Purdah-system etc.

Bacteriology :

General characteristics of Bacteria.

Conditions of life and growth.

Function in nature :

(i) Protein cleavage causing purification and purification of sewage.

(ii) Fermentation—Securing of milk, ripening of cheese and formation of alcohol.

(iii) Nitrification—Nitrogen fixation.

Relation to Disease.

Works of Pasteur, Lister, Koch, Jenner, Manson Ross, Fleming.

Morphological classification of bacteria-cocci, bacilli, vibrios, spillae, spirochaetes, Filterable Viruses.

Yeasts and Moulds—

Protozoa.

Bacteriological study of air, soil, water, milk and sewage.
Study of the common disease producing bacteria under the microscope.

Use of culture in the growth of bacteria.

Section B. Food and Nutrition :**Theory—****Food :**

- i) Definition—Functions of food.
- ii) Physiological division of food—Body building food; Energy foods, protective foods and regulative foods.
- iii) Constituents of food stuffs—their need, sources, importance, quality and quantity.
- iv) Classification of foods :
 - (a) Vegetable—cereals, pulses and lentils, fruits, vegetables (leafy, root, fruit, stems and stalks flowers) with examples and availability.
 - (b) Animal food—fish, poultry, meat, egg, cheese, milk and milk products.
- v) Selection, care and preparation of the above (iv) for cooking and food.
- vi) Diets—Balanced diets according to individuals needs, age, sex, activity and state of health.
- vii) Reasons for cooking food; principles of cooking; methods of cooking.
- viii) Kitchen—Cleanliness, arrangement, proper use, cleanliness in handling and cooking of food stuff, safe storing of left over foods in a proper manner.

Practical—

Dishes to illustrate different methods of cooking. Ordinary simple foods—rice, dal, phulkas, paratta, puri, vegetables (simple and mixed) curries, Raitha, khichri, Tahari, chatney etc. Simple sweets and namkins—Halvas, kheers, phirni, barfi, pakora, sev, mattri, chops, cutlets, sand-wiches.

Invalid dishes—Soaps, dalia, khichri.

Beverages—Tea, coffee, cocoa, lassi, shikanjhi

Egg dishes—boiled—hard or half, fried, simple omlets.

Note :—Preparations can be vegetarian or non-vegetarian.

Section C. *Mother-Craft and Child-Development :*

Anatomy of the Reproductive Organs.

Physiology of Reproduction.

Production of ova and sperms.

Menstruation and the oestrous cycle.

Fertilisation.

Implantation and Preguancy.

Signs of Pregnancy.

Care of the Pregnant Mother

with reference to--diet, fresh air, sunshine, clothing,
cleanliness, rest, exercise, mental
outlook etc.

Mirror disturbances during pregnancy.

Toxaemias of Pregnancy—symptoms, detection and care.

Ante-Natal clinics and their importance—

Child Development

1. *The Scope of Psychology :*

The different fields of Psychology and their applications.
Child Psychology—its problem, data and methods.

2. *Original Nature and its modifications :*

Heredity—Its meaning and functioning, environmental effects on growth and development. Meaning of growth. Meaning of maturity. Characteristics of original nature, Race : nationality—sex as factors in original nature. Social heredity. Methods and possibilities of modification. Expression, Repression and Sublimation.

3. *Human Behaviour :*

Meaning of behaviour, specific tendencies determining behaviour. The types of human behaviour.

4. *General Tendencies :*

Sympathy suggestion and imitation. Play.

5. *The Physiological basis of behaviour :*

The human nervous system. The glands.

6. *The human mind :*

Sensation, Perception and concept formation. Imagination, memory, Day-dreams. Illusions and Hallucinations. Intellect and thought process.

7. *Personality Development :*

The Physiological basis of Personality.

The influence of mind on Personality.

Emotions and sentiments.

Influence of culture on personality development.

Section D. *House-Craft and Home-Management :*

Section 1. House-Craft.

Section 2. Home-Management.

1. *Scope :*

House-hold economics as comprising the general business aspects of both house-keeping and home making. The science and Art of planned family living. Relation to other studies.

2. *Family in relation to society :*

The family, its importance in individual and social life. The structure and function of family, Domestic and Civil relationship. Privileges and obligations of membership of a family. Mother as a Central figure to unite and harmonise her relationship with the husband, children, servants, guests. Uses of leisure, mutual obligations of the community and family.

3. *Human Wants :*

Character of wants. Different wants, necessities, comforts and luxuries. Efforts and satisfaction. Law of diminishing utility, wealth and welfare. Relative urgency of the organised house-hold. Leisure and its value. The women's activities outside the home.

4. *Standard of Living :*

Constituents of standard of life. Different standards. Importance of standard of living. Standard of living and wages. Means of raising the standard. The Indian standard of life, rural and urban standards.

5. *House-hold Income and Expenditure :*

Money income and real income. Supplementary family income, subsidiary family occupations, spinning, weaving, kitchen, gardening, poultry-keeping, dairying and home-crafts.

Schedule of anticipated income and its allotment between various expenditure. The family budgets, its main items. Principal equimarginal satisfactions.

House-Craft

1. House—Selections—site and surroundings—building materials and suitability with regard to comfort, convenience and economy.
2. Arrangement and cleanliness—allotment of rooms according to conveniences; Daily, weekly and seasonal cleaning; Equipments used for cleaning conventional as well as modern labour saving equipments—their use and care.
 - (a) Cleaning of floors, walls, wood and glass. Cleaning and polishing of furniture, doors and windows.
 - (b) Cleaning of utensils, cutlery and crockery. Use of cleaning agents, and abrasives.
 - (c) Cleaning and polishing of metals—agents used and their action.
3. Decoration—Decoration of the various rooms according to suitability—Furniture and their designs. Aesthetic sense in decoration. Decoration with useful articles. Hobbies—advantages—use of leisure. Remunerative and recreatory hobbies. Development of aesthetic sense through hobbies.
4. Decoration of the dining room and dining-table. Decoration, presentation and serving of food (Indian and Western). Practical—All the connected activities should be carried out as practical work.

Clothes.

1. Clothes. Function; suitability and selection according to purpose.
2. Classification of fibres; their physical and chemical properties—cotton, linen, wool, silk and synthetic (man-made) fibres.

3. Designs and variety in cloth-woven designs and surface designs.

4. Traditional textiles of India—

Brocades, Embroidered textiles, cotton-muslins, silk (Kashmiri, Benarasi, Mysore and South India) tapestries and carpets.

5. Khaddar, handloom and mill-made cloths.

Needle craft—

6. The principle stitches (Hem, back stitch, running stitch etc.) and their use.

Darts, tucks, gathers and frills.

Sewing of hooks and eyes and button.

7. Parts of a sewing machine—sewing with the aid of a machine. Care of the machine. Oiling and cleaning of the machine. Setting simple faults right.

8. Principles of taking measurements and principles of drafting.

9. Calculation of the approximate quantity of cloth of different widths for the various garments of different sizes.

10. Cutting and sewing of the following garments :—

Children's garments—Napkins, Chaddis, jangayas,

Jablas, zompers, frocks and petti coats, Baby suits,

Blouses, Petti-coats (sari).

11. Embroidery—Simple and effective embroidery stitches—

Study of colour harmony.

Practicals—

1. Drafting and cutting and sewing of the garments mentioned above.
2. Embroidery—Table cloth, tray-cloth, Tea Cosis.
3. Knitting—Socks (on two and four needle) baby suit sets.
4. Crochet Wk.—laces, insertions and cloylies.
5. Study of the yarns of the various kinds under microscope.
6. Samples of different design and patterns for a study.

Appendix III

(Ref. Committee of Courses in Home Sc. Res. No. 1 (c) of
May 6 & 7, 1958)

Home Science II Year.

Section A : *Hygiene, Bacteriology, Home-Nursing and First-Aid.*

General Hygiene :

1. Health and Disease.

Development of Hygiene and its branches.

2. *Air & Ventilation :*

Composition and physical properties of air.

Impurities of air and their effects on health.

Products of respiration.

Products of combustion.

Products of decomposition.

Dust and micro-organisms.

Industrial pollution of air.

Means employed to minimize dust and smoke nuisance and industrial pollution.

Importance of fresh, pure air—Amount of fresh air required.

Meaning of Ventilation—

Effects on health of defective ventilation and over-crowding.

Test for effectiveness of ventilation.

Cooking power of air—Kata Thermometer.

Floor-space and cubic capacity—

Bye-laws regarding these.

System of ventilation—Natural and Artificial (with special reference to India).

3. *Water Supply :*

Needs. Quantity necessary for healthy living. Composition of water. Impurities in water—their sources and effects on health. Hard and Soft water. Methods of softening water. Sources of water-supply with reference to their suitability. Rain water. Surface Water—Lakes, tanks, rivers and streams. Ground or Sub-soil water—wells & springs. Pollution of water supply—its detection and prevention.

Methods of purification of water. Domestic and on large scale. Storage of water.

4. *Food & Nutrition*—To be studied under Dietetics.

5. *Disposal of Refuse and Excreta* in town and country—

(i) Collection of refuse from houses and streets.

Disposal of refuse—Dumping, incineration.

(ii) Collection and Disposal of excreta.

a) Dry Conservancy System—

Types of latrines.

Collection of Night-soil and its disposal

Manure making.

Disadvantages of hand removal system.

Disposal of sullage.

b) Water carriage system—

Water-closets. Varieties of close's-soil-pipe,

House-drain, sewers-traps.

Baths, sinks and urinals—

Testing of Drains.

Inspection, cleaning & ventilation of sewers.

Disposal of sewage :

Land treatment.

Septic-tank treatment.

Activated sludge process—Chemical treatment.

Disposal of slop-water, sullage and effluent from septic tank.

6. *The House*—

(i) Selection of site—effects of climate, soil and surroundings.

(ii) Planning of the house—

Living rooms, Kitchen & kitchen-store, baths and lavatories, Garage and Storing space. Open-space, compounds, gardens, cow-sheds, stables, poultry-houses etc.

(iii) Construction with reference to

Foundation—flooring, roof, walls, drains, protection from pests-rats, flies, mosquitoes etc.

(iv) Ventilation and Lighting arrangements :

Ventilation—See under Air and ventilation.

Lighting—Importance of sun-light, artificial lighting—electricity, gas, oils, petroleum products etc.

Direct and indirect methods of lighting.

(v) Heating and cooling arrangements—Air-conditioning.

Bacteriology & Infections :

Definition of Infectious-diseases—Endemic, Epidemic, pandemic and sporadic diseases. Stages following infection.

Sources of infection. Channels of infection.

Modes of transmission of infection—

Direct contagion,

Droplet infection—air and dust.

Water and food.

Fomites.

Animal-bite, insect transmission—mosquito, sand-fly, fleas, bugs, ticks, mite and lice.

Restraint of infection—

Molification (Notifiable diseases).

Isolation and segregation.

Quarantine.

Disinfection—study of common anti-septics and disinfectants. Methods of disinfection.

Immunisation—Vaccination—inoculation.

Study of the following infectious diseases :

(Their cause, mode of transmission, symptoms, incubation and infective period, methods of prevention etc.).

Small-pox, chicken-pox, measles. Common-cold, influenza, diphtheria, whooping cough. Mumps, poliomyelitis (in-fantile-paralysis).

Enteric group of fevers, cholera, dysentery, diarrhoea.

Worm infections—(Different kinds of parasitic worms—their life-history, mode of infection, prevention etc.).

Tuberculosis—Leprosy.

Malaria (Life-history of malarial parasites)—Plague.

Hydrophobia (Rabies).

Tetanus.

Home-Nursing & First-Aid :

1. First-aid methods in connection with Burns and Scalds, Cuts and wounds, Sprains, fractures and dislocations, Haemorrhage, Drowning. Heat and cold stroke. Bites and stings. Foreign bodies in the eye, ear, nose and throat. Unconsciousness—fainting. Fits and convulsions.
Common poisons and their antidotes.
2. Care of the sick with special emphasis on the care and isolation of an infectious case at home.
3. Preparation and arrangement of the room for confinement—Nursing of the mother and child during this period.
4. Use of the common drugs, antiseptics and disinfectants—Practical methods of disinfection.
5. Medicine—chest and First-aid box.

Section B. *Food and Nutrition*

Theory—

(i) Diets—

- a) Family nutrition and meal planning—what makes an adequate diet for various age groups.
- b) Meal planning for various income levels in India.
- c) Costing of diets.
- d) Low-cost menus which supply the minimum essentials of protective, energy and body-building foods.
- e) Planning proper meals for a family.
- f) Planning food for the adults—
 - a) Man—active, sedentary, over-weight and under-weight.
 - b) Woman—active, sedentary, over-weight, prospective mother, nursing mother.
- g) Planning food for adolescents—boys and girls.
- h) Planning for different age groups.

(ii) Food for a baby—

- a) Schedule on breast and bottle feeding and care of the equipments.
- b) Food during teething.

- c) Food during weaning.
 - d) Food supplements at different stages.
 - e) Preparation in regard to formation of good food-habits for later years.
 - f) Daily food needs with regard to quality and quantity.
- (iii) Nutritional developments at various stages of growth.
- iv) Developing good eating habits in children—transfer from breast (bottle) to spoon. Introducing new foods, time and place of feeding; size of servings; freedom to choose or leave; guidance in selection of food; rest and calm before eating.
- (v) Typical food for small children :
- Milk and milk diets, whole grain cereals, eggs and animal proteins, fruits (tomato, citrus), vegetables (leafy), Fats (butter and cream), Vitamin D.
- (vi) Fermenting of foods—Yeast and its food value.
- (vii) Sprouting of grams and grains—importance.
- (viii) Raising agents—air, baking powder, Nitra (alcohol) & egg.
- (ix) Value and place of salads in meals.

Practical

More of advanced India Cookery—Koftas, Pulao, Kachori, roasted, fried and steamed dishes.

Namkin and Sweets—Samosa, Kasta Kachori, Chevda, Sri-kant, Gulab Jamun, Gujiya, Laddu, Jelly, Custards.

Invalid dishes—Puddings, thick soups, Barley water, Sago etc.

Beverages—Sherbets, fruit juices, milk shakes.

Complete meals for different age, income and occupation levels—costing and assessing them.

Egg cookery—Omelettes, small cakes and pastries.

Scones, ice-cream, fruit-salads.

Preparation and presentation (decoration) of salads as full meals and supplementary foods.

Note : Option of vegetarian or non-vegetarian dishes allowed.

Section C. Mother-Craft and Child Development—

1. Preparations for the arrival of the New-born.

Preparations for confinement in the house—importance of having trained assistance.

Maternity homes and hospitals.

2. *Care of the Mother :*

Care during puerperium—

Diet, exercise, rest, clothing, fresh-air-cleanliness. Care of the breasts. Puerperal Sepsis—causes and prevention

Post-natal care—

Diet, exercise, rest, clothing etc.

Importance of breast-feeding.

Time for Weaning.

Family-planning and Birth-control.

3. *Care of the New-born and the Young-Baby :*

Feeding—Breast and artificial feeding—quantity and schedule. Preparation of artificial feeds—cow's milk, patent foods.

Test-Feeds—Supplementary feeding.

Food-supplements at various stages—Weaning—

Weight as a guide to good nutrition.

Bathing and Toilet.

Clothing.

Importance of fresh-air and sun-shine.

Proper habit formation with regard to eating, sleeping, elimination, exercise, play, suitable toys etc.

Health protection for children :

Vaccination, Inoculation.

Physical Development of the child :

Weight as a guide to progress-teething.

Record of Health and Disease.

Disorders of Nutrition & Minor Ailments, Cause & Prevention :

Rickets, Dental caries, Scurvy, Malnutrition.

Constipation, Summer-diarrhoea.

Defective Posture—Prevention and correction.

Defects of Vision—detection and correction.

Maternal and Infantile Mortality :

Chief causes and prevention.

*Maternity & Infant Welfare work in towns and rural areas :***Child Development.****Education & Child Development.****1. History :**

(i) The various theories of education.

(ii) The Psychological tendencies in education. Pestalozzi-Herbert & Froebel. Scientific tendency of Herbert Spencer. The Sociological tendencies in education and the present eclectic tendency.

2. The Philosophy of Education :

Meaning, scope and function of educational philosophy.

Systematic philosophies of education, naturalism, idealism, realism and pragmatism. The individual society and education

The School and Social progress.

The educative process.

3. The Basic Education :

Philosophical, cultural, Sociological and economic ideas underlying basic education.

4. Modern Methods of Education :

(a) Montessori Method.

(b) Kinder-garten method.

(c) Project Plan Method.

(d) Assignment system.

(e) Play-way method of Education.

(f) Basic Method of Education.

(g) Scout and Girl Guide Movement.

(h) N. C. C. and A. C. C.

(i) Co-curricula activities of Institution and their educative value for the development of Personality.

Section D. Home Management :**1. Housing :**

The choice of a home. Business aspects of owning the house and renting the house. Standards of housing of different classes. Minimum housing, over-crowding and its effects.

Arrangements of furniture and accommodation in home.

Housing legislation. Building Societies. Luxuries.

2. *Household Income and Expenditure :*

(a) *Production in the Home :*

The old self-sufficing home. The extreme modern apartment hotel. The average home both in East and West. Growing dependence of the home on organised industry.

(b) *Labour in the Home :*

The house-wife, chief labourer. The share of husband and her children. Domestic servants. Labour saving appliances.

(c) *House-hold Expenditure :*

Family budget-Studies. Angel's Laws. Financial records of the household. The cash-book. Other records. House credit and debt.

(d) *Food :*

Food choice and storing of food. Relative food costs. Individual and community kitchens. Uneconomic consumptions and wastage of food. Restaurants and tea-shops and their effects on income of working classes.

(e) *Clothing :*

Ready-to-wear, tailor made and home made clothes. Clothing in India, Sewing machine in the home. Choice of clothing, waste in clothing and fashions.

(f) *Capital and Savings :*

Need for saving, temporary saving and permanent saving. Institutions for small and big savings. The savings bank. Post Office. Savings Bank and indigenous institutions for savings. Current and deposit banking accounts. The cheque and its uses. Money lenders, borrowing, interest. Life Insurance and different types of policies. Ornaments and their importance in family life.

(g) *Health and Disease, family costs in Health, sickness and death.*

(h) *Cultural and other expenses :*

Expenditure on education, travel and recreation. Subscription for personal enjoyment and in support of social Welfare Schemes, Cinema, Library and family outings.

(i) *Maintenance and Replenishing charges :*

House-hold equipment, need to maintain family property intact, repairs. The economic use of clothes, old clothes, packing materials and tins. The problems of storage of household articles.

3. *Economics of Household purchases :*

Wholesale and retail purchases. The retail shop. Piecemeal purchase and purchases for the month. The cooperative store and its importance. Vendors and hawkers, pedlars etc. Proper weights and measures. Laws regarding adulteration of food stuffs. Cash purchase and credit purchase.

House-Craft.

Section D.

1. *Decoration :*

- (a) Colour in the home and the colour scheme.
- (b) Curtains and their various purposes and effects.
- (c) Use of lined cloth and their effects.
- (d) Selection of utensils and crockery according to design and colour-scheme.
- (e) Selection of proper paintings and pictures for the various rooms.
- (f) Interior and exterior decorations.

2. Information regarding post-office, telegraph office, telephone office and railway. The facilities and convenience they offer.

Practical—All of the above knowledge should be done in practical work.

Cloths.

1. Different kinds of finishes in cloth :

Anti-crease, mercerised, sanforised, water-proof, heat-proof, tufted, embossed etc. etc.

2. Designs in cloths and designing with fabrics :

Lines and their effect. Checks and their effect.

3. Fabrics for the various uses :
 - (a) Dress fabrics.
 - (b) Fabric for upholstering and furnishing.
 - (c) Fabrics for daily wear and house-hold work.
 - (d) Kitchen linen.
4. Principles of drafting and cutting the following garments—Shylwar and Kamis-cholis pyjamas, kurtas and shirts.
5. Selection of clothes—designs and colours according to one's stature and complexion, smartness of dress—convenience of dresses.

Practicals—

1. Cutting and sewing the garments mentioned above.
 2. Embroidery—effective designs and applique on children's garments, table clothes and tray covers, Pillow cases, Cloylies and hand-bags.
 3. Knitting—pull overs or sweaters of at least 2 designs.
 4. Crochet—corners, centre pieces and edgings.
 5. Samples of different kinds of fabrics.
- Mending—Darning, patches of different kinds. renovation of clothes.

Appendix IV

(Ref. Committee of Courses in Home Sc. Res. No. 1 (d) of
May 6 & 7, 1958)

Home Science (III Year)

Section A : *Hygiene, Bacteriology, Home Nursing & first Aid.*

Public Hygiene :

Public-health administration.

History—Survey of India and other countries.

Town-Planning :

Dwellings, markets, roads, parks, open-spaces, play-grounds, factories, mills, cremation-grounds, agricultural farms, sewage farms etc.

Public-Water Supply :

Standard of purity.

Dual supply of filtered and unfiltered water.

Intermittent and constant supply.

Food control :

Adulteration of food-stuffs.

Food-poisoning.

Control of diseases spreading through food.

Sanitation :

Disposal of the Dead.

Fairs, camps and markets—sanitary arrangements.

Fairs, camps and markets—medical arrangements.

Control of epidemics and endemic infections.

Health Centres—

Ante-natal clinics, Maternity and Child Welfare centres.

Family-planning clinics.

Place and sphere of dispensary, hospitals, sanatoria, Homes for couples and asylums:

Modern movements for the education of society in the laws of health.

Work of various health organisations—

Municipal & District public-health departments, Staff and their duties.

W. H. O.

U. N. A. C.

School-Hygiene :

School-building and its surroundings.

Class-rooms-size, ventilation and lighting.

Desks and Seats-adjustable according to the needs of the pupil.

Play-grounds. Canteens. Sanitation. Medical inspection of school children.

Protective vaccination and inoculation.

Village Sanitation :

Unhygienic conditions of village.

Hygienic planning.

Water-supply and rural sanitation.

Role of fixed and travelling dispensaries in controlling sickness in rural areas.

Revision of the First and Second Year's Work.

Section B: *Food and Nutrition :*

Theory—

- i) Diets-Food for pre-school children.
- ii) Food-School children.
- iii) Vitamins specially needed in nutrition. Good sauces, functions and deficiency symptoms of Vitamin A, Vitamin B, Vitamin C, Vitamin D, Vitamin E and Vitamin K.
- iv) Important minerals in food—calcium, iron, phosphorus, iodine and copper—their sources and functions.
- v) Classification of protein foods—Important essential amino acid.
- vi) Nutrition-Indication of good nutrition.
 - a) Physical signs—good health, weight and height in proportion to age and sex; good digestion and elimination, good (sound) sleep on retiring.
 - b) Emotional and mental signs—alertness, poise, well integrated personality and cheerfulness.
- vii) Digestive processes and its relation to good nutrition.
- viii) Preservation of Food—Reasons, aims and objectives for preservation. Principles of preservation. Methods of pre-

servation—Drying (dehydration) pickling, smoking, preserving in syrups—jams, jellies, bottling, canning, freezing and refrigeration.

ix) Malnutrition and food therapy—

Causes of Malnutrition. Deficiency diseases—recognition and treatment.

1. Vitamin deficiencies.
2. Mineral deficiencies.
3. Protein deficiencies.

(Diabetics, disorders of the digestive tract and blood and diseases of urinary system to be learnt under Physiology section).

Practicals :

Complete low cost, high cost and moderate cost menu foods with costing and assessment—Toffies, Barfis. Laddus, Pulao. Local preparation for festivals;

Puddings of different kinds.

Egg preparation.

Sandwiches of different kinds.

Salads and their arrangements.

Biscuits, cakes. Preservation of fruits and vegetables.

(Stress to be laid on the importance of the decoration, presentation and serving).

*Note :—*Option of vegetarian or non-vegetarian dishes allowed.

Section C : *Child Development :*

(Child Psychology)

1. The problem, data and method of psychology with special emphasis on modern methods.
Its relation to other branches. The modern experimental method of the study of the child development.
2. *Heredity and Environment*—The facts of Heredity, Physiological and Social Heredity. Original nature. The Physiology of nervous system. The functions of glands. The nervous system. The study of the brain and its mechanism. The stages of nervous adjustment of the child with the environment
3. The senses and the sense training and the adjustment of the senses to the environment—an experimental study.

4. The body mind problem and its relationship. Nature of consciousness and types of behaviour. Possibilities of modification of original nature and their methods.
5. *Imagination*—Types of imagination—significance of imagination in the development of personality—(The study is to be the observation of a number of concrete cases).
6. The personality of the child—
 - i) The habits and the conditions of habit formation in a child.
 - ii) The laws of learning and the study of learning with child.
 - iii) Emotions and feelings in a child—Emotion and instincts and their relation.
 - iv) Training of emotion in a child (Practical observation also).
7. The nature and causes of problem behaviour—(a) temper, (b) tantrum, (c) fear, (d) jealousy, (e) telling lies, (f) destructive behaviour.
8. *Intelligence*—Its nature—The stages of development of intelligence in a child. Methods of studying intelligence. The apparatus used and their value. The methods of testing intelligence at various age groups. The different types of intelligence tests. (Practical application of some of the intelligence tests).
9. *Learning*—Animals and Human learning. Learning by trial & error, learning by insight. Formation & breaking of habits.
10. *Attention*—Its nature and relation to consciousness. Kinds of attention. Conditions of attention.
11. *Perception & sensation*—Illusions and their causes. The study of the various types of illusions.
12. *Memory*—Laws of memory—condition of good memory. Training of memory.
13. *Thinking and reasoning*—Formation of concepts. Thinking and language and methods of improving them in a child. Methods of developing and educating a child in reasoning.
14. *Feeling and emotion*—The different kinds of motivation. The learnt and unlearnt motives. Theories of emotion, moods, sentiments and complexes.
15. *Personality*—Types. Integration of personality.

16. *Psycho analysis and Psychotherapy*—Complexes, neurotic behaviour, causes and cure.
17. *Modern Methods of training*—Scouts and guides' movements. N. C. C. and A. C. C. training. Co-curricular activities in institutions, their educative value in the development of personality.

Home Management

1. *Women and Civic responsibilities :*

Local authorities, municipalities, District Boards, Panchayats and their duties. Public utilities like supply of light, water, conveyances, telephone, post and telegraph service etc. Women and local administration. Mainline promotion of social Hygiene and Personal Hygiene.

Income and expenditure of public authorities, National and local taxes, Main Indian Taxes.

2. *Philosophy of home management :*

Responsibilities in home-making.

The efficient home manager.

Time and energy management in home-making. Planning, acquiring skills and improving methods of work. Improving working conditions.

3. *Modern Scientific equipment in India :*

Present condition of the Indian Kitchen equipment. Desirable changes in kitchen work. Materials used in utensils. Changes desirable in Indian kitchen utensils in their material, design and functional aspect.

4. *Woman and the Society :*

The Five Year Plans. The Development of Projects and its implications on her life and her home. Social Welfare organisation—her functions as a member of the society. The National Saving Scheme and her responsibility as a member of the society. The Hindu Code Bill and its implications. The Right of Inheritance Act.

Woman in relation to Society :

An elementary study of the Indian Constitution. The Right of Franchise. The Legislature, its composition and function. The composition and function of the Municipal Board or Corporation. The choice of a career.

Section D. *House-Craft* :—

1. Duties of the house-wife. Proper programme for the daily routine work—its advantages and conveniences—arrangement for rest and recreation, social contacts and social service.
2. Importance and place of clubs, picnics, cinemas, libraries and reading-room.
3. Hospitality—Receiving, entertaining, conversing and bidding good-bye. The etiquette of the host. Making the guest feel at home; pleasant and cheerful atmosphere and attitude.
4. Etiquette and Manners (conduct) of the host and the guest—how to call and take leave pleasantly.
5. Budgets and account keeping (under home economics).
6. Management of servants—attitude towards them—care of the domestic animals and pets.
7. Savings and investments (Home and commerce).
8. The manifold duties of the mistress of the home—her attitude and behaviour with the members of the family—Duty and responsibility to make house a place of happiness, comfort and attraction for all the members of the family—Individual attention and care—Respect of the individuality Homeliness.

Practical :

Practical training in maintaining accounts, drawing out budget :

Keeping of the accounts of provision. washerman, milk-man, grocer etc.

Every other aspect of the subject be given as much practice as possible in the college.

Clothes

Laundry :

1. Hard and soft water—disadvantages of washing in hard-water. Softening of hard water.
2. Soaps and soap powders—detergents.
3. Effect of alkali on different fibres.
4. Principles of washing, boiling, blueing, starching and ironing of cotton, silk, wool and synthetic fibres.
5. Principles of issuing, folding and storage of clothes.

6. Starches—kinds, preparations and use.
7. Principles of the removal of stains—animal stains, vegetable stains and chemical stains.
8. Principles of dry cleaning—use of solvents, absorbents etc.
9. Principles of washing fast and non-fast coloured clothes.
10. Principles of dyeing—fast as well as non-fast.

Practicals :

1. Hard and Soft water.
2. Effect of alkali on different materials.
3. Determination of alkalinity of different soaps and detergents.
4. Washing, boiling, blueing and starching, ironing of different garments of different fibres.
5. Washing of non-fast coloured garments.
6. Preparation, application of starches of different strength.
7. Study of the starch grains under the microscope.
8. Removal of stains of the different kinds.
9. Dry cleaning agents and methods used.
10. Storage of clothes using insecticides.

January, 1958.

Faculty

General.

Six papers (three compulsory & three optional)
each of 3 hours duration each carrying 100
marks.

COMPULSORY PAPERS.

1. General Hindi.
2. General English.
3. General Education.

OPTIONAL PAPERS.

1. English Literature.
2. A classical Language (Sanskrit or Pali and Commercial for the present)
3. Literature of a Indian Language or Urdu for the present English.
4. History.
5. Geography. in Hindi.
6. Logic.
7. Psychology. Hindi.
8. Economics.
9. Mathematics.
10. Civics.
11. Drawing.
12. Music.
13. Physiology, Hygiene.

1. The standard of the Exam. shall not be lower than that of the Higher Secondary Education.

2. Classification of results.

1st Dn. 60%

2nd Dn. 45%

3rd Dn. 33%

A candidate is required to pass in the written & Practical Exams. separately, in Sc. subjects.

3. For distinction 75% of the aggregate marks in a subject shall be the minimum.

Appendix V

*(Ref. Committee of Courses in Home Sc. Res. No. 2 of
May 6 & 7, 1958)*

1. Under Para III, Human wants, between the second and third sentence add "the importance of planning the days' work in order that there is enough leisure for rest, recreation and hobbies".
2. Page 58. Under para (iv) (g) add at the end "Working and repairs of household equipment such as electric appliances, stoves, water tanks, taps, sewing machine".

APPENDIX P

(*Ref. Fac. of Arts Res. No. 19 of Nov. 5, 1958*)

Minutes of a meeting of the Committee of Courses in Economic and Public Administration, appointed by the Vice-Chancellor, held on Thursday, the 8th May 1958 at 12.30 P. M. at the University Office, Jaipur.

Present :

1. Dr. R. R. Kasliwal
2. Prof. M. V. Mathur
(*Convener*)

1. *Resolved to recommend that the courses of study in Economic and Public Administration for the M. A. Previous examination of 1960 and M. A. Final examination of 1961 be the same as for the examinations of 1959 and 1960 respectively.*
2. The Committee revised the Panel of examiners in Economic and Public Administration.
3. The Committee went through the question papers set for the examination of 1958 and made the following observations :—

First Paper—Principles of Administration

Questions 7 & 8 are not covered by the syllabus prescribed for this paper. These belong to Second and Third Papers.

Optional Group A—Second Paper.

Economic Analysis and Policy :

In question No. 5 "Theory of Unemployment" has been mentioned : the idea might have been to ask about the "theory of employment"; perhaps it is a misprint.

4. *Recommended that, if necessary, Dr. R. R. Kasliwal should serve as a member of the Committee for Selection of examiners in this subject.*

M. V. Mathur
Convener.

MINUTES OF A MEETING OF THE FACULTY OF
SCIENCE, HELD ON THURSDAY, THE 6TH
NOVEMBER, 1958, AT 1.00 P. M. AT THE
UNIVERSITY OFFICE, JAIPUR.

PRESENT:

Dr. K. P. Rode (*In the Chair*)

- | | |
|---------------------------------|-----------------------------|
| 2. Dr. V. L. Talekar | 3. Dr. C. B. Rath |
| 4. Dr. R. D. Gupta | 5. Shri Shivaraj Bahadur |
| 6. Shri S. R. Mital | 7. Dr. S. P. Kaushik |
| 8. Dr. A. Rathore | 9. Shri H. N. Mehrotra |
| 10. Shri P. C. Thapan | 11. Shri M. R. Bajpai |
| 12. Dr. K. D. Baweja | 13. Shri K. P. Halder |
| 14. Shri B. Tiagi | 15. Shri Ganesh Narain |
| 16. Shri S. S. Dube | 17. Dr. G. V. Bakore |
| 18. Shri Param Sukh Mathur | 19. Shri Sampuran Singh |
| 20. Shri S. N. Dube | Cheema |
| 22. Shri P. K. Bansal | 21. Shri R. B. Nigam |
| 24. Shri Shiva Shanker | 23. Shri B. Ram |
| 26. Shri H. D. Purohit | 25. Dr. J. N. Gaur |
| 28. Shri S. K. Rath | 27. Shri G. R. Nigam |
| 30. Shri B. Prasad | 29. Shri K. C. Jain |
| 32. Dr. M. M. Singh | 31. Dr. R. L. Mital |
| 34. Dr. N. D. Gautam | 33. Shri D. Gupta |
| 36. Shri Sohan Singh Sodhi | 35. Dr. R. S. Saxena |
| 38. Shri P. Sinha | 37. Shri Shanti Sarup |
| 40. Shri R. K. Kaushik | 39. Shri Girraj Prasad |
| 42. Shri Jagdeesh Prasad Saxena | 41. Shri Shrutti Dhar Gupta |
| 44. Shri B. L. Jain | 43. Shri D. S. Kothari |
| 46. Shri G. P. Mishra | 45. Shri A. K. Bhattacharya |

Receipt of letter dated the 5th November from Dr. S. M. Mitra,
Dean of the Faculty of Science regretting his inability to attend
this meeting of the Faculty owing to previous engagements was

reported. The Faculty unanimously elected Dr. K. P. Rode to be the Chairman for the meeting.

2. The minutes of the meeting of the Faculty of Science, held on the 18th December, 1957, were confirmed.

3. With reference to its Resolution No. 2 of December 18, 1957, the Faculty considered the following proposals received from Shri G. R. Nigam, Professor of Physics, Jaswant College, Jodhpur, regarding practical examination in Science subjects (postponed last time) :—

- (1) In continuation of the resolution para No. 12 (2) passed by the Faculty of Science in its meeting, held on 24th January, 1957 it be also resolved to recommend that I. Sc. and B. Sc. practical examination in Science subjects be henceforth conducted by a Board of Examiners consisting of two members, one of whom shall be External Examiner and the other shall be the Internal Examiner and both the examiners shall have equal status in all respects so that there may be more uniformity of standards and improved student discipline in the colleges and outside.
- (2) To do away with a lot of correspondence to settle the dates of Practical Examination in Science subjects it be resolved to recommend that the University shall prepare the programme of practical examinations for Intermediate and Degree Science subjects for all Examination Centres meant for the purpose from the examination of 1959.

Resolved that the above proposals of Shri G. R. Nigam be not accepted and the present practice should continue.

4. With reference to its Res. No. 9 of December 18, 1957, the Faculty considered the following recommendations of the Board of Studies in Zoology as contained in its Res. No. 10 a & b of September 11, 1957 regarding re-orientation of the M. Sc. syllabus and abolishing the thesis at the M. Sc. stage (postponed last

time) :—

- "10 (a) The Board felt that the syllabus for M. Sc. Examination should be so reorientated as to have four papers of 75 marks each in the previous instead of 3 papers of 100 marks each and four papers in final of 75 marks each. This will not disturb the present total aggregate of marks and will surely raise the standard of the present papers and will give provision for having two papers on special group in M. Sc. Final.

For this purpose the Board appointed the Convener and Dr. P. N. Mathur to revise the M. Sc. syllabus.

- (b) The Board further resolved that 'Thesis should be abolished at the M. Sc. stage'.

Resolved that the above recommendations of the Board be not accepted.

5. With reference to its Res. No. 13, dated the 18th December, 1957, regarding the principles of introducing the teaching of Biometry, the Faculty considered the recommendations of the following Boards of Studies as contained in their resolutions noted against each, passed at their meetings held in September 1957 (postponed last time) :—

- | | |
|-------------------------------------|-------------|
| 1. Board of Studies in Botany. | Res. No. 8. |
| 2. Board of Studies in Zoology. | Res. No. 9. |
| 3. Board of Studies in Mathematics. | Res. No. 6. |

Resolved that the consideration of the matter be further postponed pending a definite recommendation to be made by the Board of Studies in Zoology.

6. The Faculty appointed the following as members on the Boards of Studies for the residue of the term noted against

each. :-

	Name with designation.	Name of the Board of Studies.	Category.
1.	Dr. G. L. Gupta, Head of the Deptt. of Physics, Govt. College, Ajmer vice Shri M. L. Garg (ceased).	Physics.	Post-graduate Head.
2.	*Shri S. K. Rath, Head of the Department of Physics, Dungar College, Bikaner vice Shri A. V. Jagannadhan, Professor of Physics, S D. Govt. College, Beawar.	Physics.	—
3.	Dr. J. N. Gaur, Head of the Deptt. of Chemistry, Maharaja's College, Jaipur. vice Dr. S. D. Arora (ceased).	Chemistry.	
4.	Dr. E. Venkaiya, Lecturer, University Deptt. of Geology, Udaipur.		
5.	Shri M. W. Chodhary, X-Ray Analyst, University Deptt. of Geology, Udaipur, vice M/s G. V. Damle and N. W. Chodhary M.B. College, Udaipur (ceased).	Geology.	Post-graduate Teachers.

7. The Faculty considered the recommendation of the Board of Studies in Zoology as contained in its Resolution No. 1 dated 9/10th May 1958, to the effect that there should be a University

* The Faculty was informed by Dr. S. P. Kaushik, Principal, S. D. Govt. College, Beawar, that Shri A. V. Jagannadhan, Professor of Physics at his college and member of the Board of Studies in Physics had since left the college, and had gone abroad for two years. The Chairman ruled that Shri Jagannadhan had ceased from the membership of the Board of Studies in Physics. On the request made by the House, the Chairman further ruled that the Faculty should elect another member in place of Shri Jagannadhan for the residue of his term.

examination at the end of the 2nd year degree course also, as is being done in the Faculties of Arts and Commerce.

Resolved to recommend that the recommendation of the Board be accepted and, as in the Faculties of Arts and Commerce, the University may hold a second year examination in the Three-Year Degree Course (Science Scheme) also.

8. With reference to Res. Nos. 6, 6, 5, 6, and 7 of the Boards of Studies in Physics, Chemistry, Botany, Zoology and Geology, respectively held in May 1958, the Faculty considered whether marks for the practical note books at the B. Sc. examination should be awarded by the teacher of the subject or by the internal examiner appointed by the University on the recommendation of the Principal of the college.

Resolved to recommend that wherever evaluation of practical Note-books was required, marks should be awarded by the teacher of the subject concerned and not by the Internal examiner.

9. The Faculty considered the recommendation of the Board of Studies in Chemistry as contained in its Res. No. 7 of May 8 and 9, 1958 to the effect that Fruit Technology of Mysore University be not recognised as equivalent to M. Sc. degree of this University.

Resolved that the associateship course in Fruit Technology of the Central Food Technological Research Institute be not recognised as equivalent to M. Sc. degree of the University. The Administrative Officer, Central Food Technological Research Institute, who had made a reference *vide* his letter No. F. T./1-17 (49) 56-1641, dated the 2nd April, 1957, be informed accordingly.

10. The Faculty considered the recommendations of the following Boards of Studies as contained in their resolutions noted against each, made at their meetings held in May 1958, on the observation of the Vice-Chancellor to the effect that there was a great disparity between the marks awarded by the external and internal examiners in M. Sc. thesis and as such either to abolish

the thesis or place some check on such glaring divergence of standards :—

- | | |
|--------------------------------|------------|
| 1. Board of Studies in Botany | Res. No. 7 |
| 2. Board of Studies in Zoology | Res. No. 8 |
| 3. Board of Studies in Geology | Res. No. 8 |

The Faculty discussed the matter thoroughly. Different views were expressed by the members, some of whom were not in favour of keeping thesis as an alternative to a paper at the M. Sc. stage. By a majority of votes (18 against 3), the Faculty *resolved to recommend* as follows :—

- i) Thesis or special paper or dissertation should carry 100 marks.
- ii) In case thesis or dissertation is submitted, two examiners shall be appointed by the University, both of whom shall be External.

N. B. After the above decision was taken by a vast majority, a protest signed by 18 members of the Faculty was handed over to the Chairman stating that a proposal duly proposed and seconded to the effect that an Internal Examiner should be there for M. Sc. thesis was not put to vote and, therefore, any decision taken in this matter should be treated as ultra-vires. The Chairman ruled that the protest had no force since a proposal to have two external examiners had earlier been put to the House and was carried by majority of votes. The decision of the Faculty was therefore quite in order.

11. The Faculty considered the recommendation of the Board of Studies in Geology as contained in its Res. No. 2 of May 6/7, 1958, to the effect that candidates who have passed (i) the 1st year course of the 5 years Engineering Degree course and (ii) the 1st year examination of the three year degree Science Course (with Physics, Chemistry and Biology for purposes of Pre-Medical Course) and opt out for the three year degree Science

course after passing the first year examination be permitted to offer the subject of Geology in the Second year and required to pass in such paper or papers of Geology as are prescribed for the 1st year Examination before they are allowed to appear at the final examination.

Resolved to recommend that the above recommendation of the Board of Studies in Geology be accepted.

In this connection it was noted by the Faculty that on the recommendation of the Three-year Degree course (Science sub-committee), the Academic Council and the Syndicate at their meetings held on February 25 and 27, 1958, respectively, had also decided that students who will be taking up Physics, Chemistry and Biology in the first year of the Three-year Degree course will be allowed after passing out the first examination at the end of the first year to take up the combination of Chemistry, Botany and Zoology.

12. The Faculty considered the following recommendation of the Board of Studies in Mathematics as contained in its Res. No. 8 of May 9 and 10, 1958 :—

“Owing to the growing importance of Statistics and in view of the absence of any Statistical Institute in Rajasthan, the Board recommended that there be a separate subject of Statistics in the three year Degree course of this University as is done in other Universities”.

Resolved to recommend that the recommendation of the Board of Studies in Mathematics for introducing the subject of Statistics in the three-year Degree course (Science) be accepted in principle and the Board of Studies in Mathematics be asked to recommend necessary courses of study in the subject of Statistics. The Board should also recommend what other two Science subjects should be allowed to be combined with the subject of statistics.

13. The Faculty considered Resolution No. 6 of the Board of Studies in Agriculture, passed at its meetings held on May 8/9/10, 1958, with regard to the minimum qualifications of teachers etc.

in the Agricultural Colleges explaining the reasons (as required to be specified vide Syndicate Res. No. 10 of January 28, 1958) as to why:—

- i) An M. Sc. has been deemed qualified for the purpose of teaching the subject of Agricultural Economics, Statistics, Farm Management and Extension to the students of Agriculture in Agricultural Colleges.
- ii) An M.A. in Economics with Agricultural Economics in his M.A. has not been included among the minimum qualifications for teaching Agricultural Economics.

Resolved that the following reasons given by the Board of Studies in Agriculture vide its Resolution cited above be accepted:—

- i) In some foreign Universities an M. Sc. degree is awarded in Agricultural Economics. The provision for an M. Sc. to teach the subject of Agricultural Economics had been made so that such an M. Sc. might not be precluded from being eligible for teaching the subject of Agricultural Economics in Agricultural Colleges.
- ii) Agricultural Economics is not taught as a solitary subject in the colleges of Agriculture, with it are associated Statistics, Farm Management and the Extension as subjects of equal value. Persons who have obtained their M. A. in Economics by offering a special paper in Agricultural Economics are not likely to be found suitable for teaching these subjects and would, therefore, be of a very limited utility in a College of Agriculture.

14. The Faculty considered the following resolution of the Central Advisory Board of Education, received from the Under Secretary to the Government of India, Ministry of Education, New Delhi, vide his letter No. F. 2-9/58. U. 5, dated the 26th June, 1958:—

“The Board recommended the facilities for appearing as private candidates at M. A. /M. Sc. Examinations of

Universities should be extended to practising teachers provided those sitting for the M. Sc. examination had undergone training in the subject concerned in a recognised institution with adequate facilities for laboratory work in one of the following three ways:—

1. By attending a special condensed course of one year duration to be organised at suitable University centre to which selected teachers working in Secondary schools could be deputed for a period of one year.
2. By attending organised vacation courses of three months duration for two or three years in succession.
3. By attending evening classes.

The Faculty was strongly against the proposal of allowing Private Candidates (including practising teachers) to appear at M. Sc. examinations of the University in Experimental Science subjects. It felt that the achievement of candidates who could attend a condensed course or a short term course in the vacations or even evening classes will not be up to the level of the regular candidates who undergo a full two years course. The Government may sanction necessary study leave to the teachers if they like to join as regular students in affiliated colleges for obtaining M. Sc. degree. The present practice should, therefore, continue and the Ministry of Education, Government of India, New Delhi be informed accordingly.

15. It was reported to the Faculty that marks on practical Note-books of ex-students for the B. Sc. examination of 1953 had not been awarded by most of the practical examiners although instructions to practical examiners were given to assign 5 marks for the purpose. This was not done, as revealed by enquiries, under an erroneous impression formed by them without reference to instructions, that since marks on Note-books were not awarded to the ex-students at the I.Sc. examination they would also not be awarded at the B.Sc. examination.

In this connection the Faculty clarified for future guidance that marks on practical Note-books be ignored in the case of ex-

students. The Boards of Studies concerned be asked to suggest re-allocation of the marks (50) assigned for the practicals for ex-students.

16. With reference to Syndicate Res. No. 18, dated the 23th January, 1958, the Faculty considered the question of awarding division to candidates who pass their B. Sc. (Ag. Pt. II Examination after passing the B.Sc.(Ag) Pt.I Supplementary Examination.

Resolved to recommend that for the award of division at the end of B. Sc. (Ag) Pt. II examination in the case of candidates who had passed B.Sc.(Ag.) Pt. I Supplementary Examination, the marks obtained by them in the subject at the Supplementary Examination be taken into account.

17. With reference to Syndicate Res. No. 3, dated the 12th August, 1958, the Faculty considered the recommendations of the Committee appointed by the Syndicate vide its Res. No. 14, dated 25th January, 1958, in connection with the observation made by the Senate at its meeting held on 8th December, 1957 to the effect that the question of suitably raising the amount of grants (recurring and non-recurring) to be spent on purchase of books by the colleges affiliated in different subjects for post-graduate examinations be taken up for consideration as the present grants were much too meagre to suitably equip the college libraries. (*vide Appendix K*)

Resolved to recommend that the recommendations made by the Committee with regard to Science subjects be approved.

18. The Faculty considered the recommendations of the Board of Studies in Agriculture as contained in its Res. Nos. 1 (b) and 7, made at its meeting held on May 8, 9 and 10, 1958, with regard to the courses of study and text-books for (a) B. Sc. Ag) Pt I of 1960 and (b) B. Sc. Ag.) Pt. II of 1961.

Resolved to recommend that the recommendations of the Board of Studies in Agriculture be accepted.

19. The Faculty considered the recommendations of the Board of Studies in Agriculture as contained in its Resolutions Nos. 1

(a) and 7 made at its meetings held on May 8, 9 and 10, 1958 with regard to the future pattern of degree courses in Agriculture consequent upon introduction of the Higher Secondary Examination, which would now be the qualifying examination for entering upon the degree courses and would gradually replace the present High School and the Intermediate Examinations, together with the Schemes of Examinations, Ordinances and detailed Syllabi for the same.

The Faculty noted that main features of the Scheme proposed by the Board of Studies are as follows.—

1. The B. Sc. (Ag) course will be a three-year degree course with an examination at the end of each year to be called as B. Sc. (Ag. Pt. I and Pt. II and Pt. III.
2. Before admission to the B. Sc. (Ag. Pt. I course, a candidate shall be required to pass the Pre-professional Agriculture course which will be of one year's duration and the examination will be conducted by the University.
3. Candidates who have either passed the High School Examination or the Higher Secondary Examination of a recognised Board or University, or examinations equivalent thereto, shall be eligible for admission to the Pre-professional Agriculture course. (Thus no distinction is proposed to be made between the High School and Higher Secondary passed candidates).

While the Faculty agreed generally to the proposals at No. 1 and 2 above, it did not favour No. 3 as the candidates passing the High School Examination could not be placed at equal level with those passing the Higher Secondary Examination. It, therefore, *resolved that* the matter be referred back to the Board for resolving this evidently anomalous position. Meanwhile, the present pattern of Agricultural degree course B. Sc. (Ag.) should continue.

20. After noting (as reported by the Registrar) the various steps taken by the University leading to the introduction of the three-year degree course, the Faculty considered the recommendations

made by the Boards of Studies/Committees of Courses regarding courses of study and text-books for the post-graduate and Degree (conventional schemes) examinations of 1960 and 1961; the First Year Examination of 1960, the Second Year Examination of 1960 and 1961, the Final Year Examination of 1961 and 1962 (Three-year Degree course scheme' and the Pre-University Examination of 1960 (in accordance with the schemes of examinations approved by the Academic Council and the Syndicate at their meetings held on the 25th and 27th February, 1958, respectively) in various subjects of the Faculty at their meetings held in May/September, 1958.

In this connection the Faculty also noted the action taken in emergency by the Vice-Chancellor (under authority given by the Syndicate *vide* Res. No. 12, dated the 27th February 1958) in allowing (on the persistent request of the State Government) introduction of the Three-year Degree course with effect from July 1958 in 13 affiliated Government colleges in the interest of the candidates who passed the Higher Secondary Examination of the Board of Secondary Education, Rajasthan, in 1958 :

Note : The reports of the meetings of the Boards of Studies/Committees of Courses are printed as appendices A to J. The letters and numbers in brackets indicate the appendix and number of the resolutions concerned passed by the respective Boards of Studies/Committees of courses.

Resolved to recommend that the courses of studies and text-books and the additions and/or alterations in Ordinances & Regulations recommended by the Boards of Studies/Committees of Courses be accepted as given below :

Physics.	(A-2).
Chemistry.	(B-2).
Botany.	(C-1).
Zoology.	(D-1 and 2).
Geography.	(E-1 and 2).

Mathematics.	(F-1 and 2).
Geology.	(G-1 and 2).
Home Science.	(H-1 and 5).
General Education.	(I ¹ -1 and I ² -2).
Agriculture.	(J-1).

K. P. Rode
Chairman.

Appendix I

(Ref. B. O. S. in Physics Res. No. 2 (a) of May 6 & 7, 1953)

Course for the Pre-University Examination in Physics.

Theory—1 Paper 100 marks 3 hours duration.

Practical— 50 marks 4 hours duration.

The following syllabus is recommended :

General Properties of matter (Including Elementary Mechanics :

Fundamental and derived units and their measurements. Vernier Calipers. Screw-gauge. Spherometer. Density. Specific Gravity. Principle of Archimedes. Nicholson's Hydrometer. Coplanar Forces. Velocity. Acceleration. Newton's Laws of Motion. Barometer. Boyle's Law. Pumps, Siphon. Elementary notions of elasticity and Young's Modulus in the case of solids.

Heat :

Temperature. Thermometers. Calorimetry. Specific heat. Latent heat. Expansion of solids, liquids and gases. Vapour pressure. Hygrometry. Change of state. Laws of unsaturated and saturated vapours. An elementary knowledge of steam and internal combustion engines.

Light :

Laws of propagation. Reflection and refraction at plane and spherical surfaces. Projection of cinema moving pictures. Photometry.

Sound :

Nature of sound waves. Characteristics of Musical sound. Mode of propagation. Reflection. Refraction. Diffraction. Interference. Effect of Temperature, pressure humidity, wind velocity etc. on velocity of sound.

Electricity and Magnetism :

Magnetisation. Permanent magnets. Magnetic induction. Earth as a magnet. Magnetic elements and their determination. Geomagnetic maps. Gold leaf electroscope. Surface density. Potential at a point. Electrophorus.

Primary cells. Electric current and its magnetic effects. Ohm's law and its verification. Determination of resistance. Chemical effect of current. Faraday's law of electrolysis. Electro-chemical equivalent. Voltmeters. Lead accumulator. Electric telegraph. Telephone. Microphone. Radio activity.

Note : Any good text-book may be followed if it covers the syllabus.

List of Experiments :

1. Verification of principle of moments.
2. Experiments with vernier callipers.
3. Experiments with screw gauge.
4. Measurement of atmospheric pressure by Fortin's barometer & correction for temperature.
5. Determination of specific heat of solids and liquids.
6. Determination of latent heat of steam.
7. Verification of laws of (1) reflection, and (2) refraction of light at plane surfaces.
8. Determination of refractive indices by (a) Prisms (minimum deviation method), (b) concave mirror.
9. Measurement of focal lengths of concave and convex mirrors and lenses by conjugate foci methods.
10. Determination of pole strength of a magnet by mapping out lines of force and determining the neutral points.
11. Determination of resistances and specific resistance by ammeter and voltmeter.
12. To set up a simple cell and measure its e. m. f. by voltmeter.
13. To study the cells in series and parallel connections and calculate the maximum current.
14. To verify laws of resistances in series and parallel combination by ammeter and voltmeter.
15. To study the magnetic effect of current on a compass needle.

Appendix II

(*Ref. B. O. S. in Physics Res. No. 2 (b) of May 6 & 7, 1958*)

Course for the 1st year of three-year degree course in Physics.

Theory—one paper 100 marks—3 hours duration.

Practical— 50 marks—4 hours duration.

The following syllabus is recommended :

General Properties of matter (Including Elementary Mechanics) :

The Physical balance. Centre of gravity, work, power and energy. Circular motion. Simple harmonic motion. Simple pendulum. Fluid pressure. Isothermal and adiabatic elasticities of gasses.

Heat :

Tunsen's Ice Calorimeter. Jolly's Steam Calorimeter. Conduction, convection, radiation. Newton's Law of Cooling and measurement of specific heat of a liquid. Reflection and absorption of heat, Isothermal and adiabatic changes. Specific heat at constant volume and constant pressure and their relation to J. Determination of J.

Light :

Dispersion. Direct vision spectroscope.

Achromatic combination of prisms and lenses, Spectra, Spectrometer. Fraunhofer's lines. Sextant. Eye and defects of vision. Photoluminescence. Fluorescence. Velocity of light. Elementary ideas about the wave theory of light, interference, diffraction and polarisation.

Sound :

Transverse and longitudinal waves. Nature of sound waves. Intensity Pitch. Quality. Stationary waves. Beats. Resonance. Vibrations of strings and air columns. Monochord and organ pipes. Determination of velocity in solids, liquids and gasses. Musical scale.

Electricity and Magnetism :

Units of magnetism. Magnetic field. Lines of force and lines of induction. Tangent. A & B positions of Gauss. Deflection and vibration magnetometers. Determination of Magnetic moments and H. Coulomb's law of force. Electric field. Electrostatic unit of charge. Capacity. Leyden jar. Capacity of parallel plate and spherical condensers. Wimshurst's machine.

E. M. unit of current. Galvanometers. Ammeters. Voltmeters. Unit of resistance and potential difference. Specific resistance. Practical

and absolute units. Meter bridge. P. O. Box. Heating effect of current. Joule's Laws. Determination of J. Electric arc. Secondary cells. Electromagnetic induction. Induction coil Simple dynamo. Motor. Thermopile. An elementary idea of the discharge of electricity through gases Cathode rays and X-rays. Alpha, beta and gamma rays Elementary ideas on the production and detection of electro-magnetic waves by the use of triode valves.

Note: Any good text-book may be followed if it covers the syllabus.

List of Experiments

1. Verification of the law of parallelogram of forces.
2. Determination of 'g' by the simple pendulum.
3. Nicholson's hydrometer; determination of density of (1) Solids and (2) Liquids.
4. Experiments with spherometer.
5. Determination of Young's Modulus for a wire by stretching.
6. Determination of specific heat by cooling curve method.
7. Determination of coefficient of linear expansion.
8. Verification of Boyle's law.
9. Determination of pressure coefficient of air.
10. Determination of refractive indices by 1) travelling microscope (2) convex lens and plane mirror, (3) total reflection at an air film.
11. Focal length of a convex lens by Displacement method.
12. Determination of velocity of sound by resonance column.
13. Determination of frequency of a fork by sonometer.
14. To compare magnetic movements of two magnets by (1) deflection magnetometer, and (2) vibration magnetometer.
15. Determination of reduction factor of a tangent galvanometer using an ammeter.
16. Variation of magnetic force at the centre of a coil with radius and number of turns.
17. Determination of resistances and verification of the laws of resistances by (a) meter bridge, (b) post office box.
18. Determination of internal resistance of a primary cell by voltmeter and ammeter or variable resistance.
19. Comparison of E. M. F.'s by potentiometer.

Appendix III

(*Ref B. O. S. in Physics Res. No. 2 (c) of May 6 & 7, 1958*)

Course for 2nd and 3rd years of three-year degree course.

	Max. Marks.	Min. Pass Marks.	Time.
Paper I—General Properties of Matter, Sound and Heat.	100	72	3 hrs.
Paper II—Light, Electricity and Magnetism.	100		
Practical.	100	36	6 hrs.

The following syllabus is recommended :

General Properties of matter :

Rotation of rigid bodies. Torque. Moment of inertia and its calculation about any axis in the case of bar, disc, cylinder and sphere. Angular momentum and kinetic energy. Simple harmonic oscillations of a rigid body. Torsion and compound pendulums. Experimental determination of moments of inertia.

Universal Gravitation: Attraction of a sphere and a spherical shell at external and internal points. Gravitation constant and its determination. Experiments of Cavendish, Boys and Poynting. Determination of 'g'. Kater's pendulum. Effect of latitude, altitude and depth on the value of 'g'.

Elasticity: Definitions of elastic constants and their inter-relations. Poisson's ratio. Torsion of a cylinder. Bending of a bar supported at the ends. Experimental determination of elastic constants.

Viscosity: Flow of a liquid through a capillary tube.

Surface Tension: Angle of contact. Rise of liquid in a capillary tube. Pressure inside a spherical bubble or drop. Jaeger's method of measuring surface tension.

Modern high vacuum pumps. Macleod gauge. Elementary principles of the flight of an aeroplane. Units, dimensions and dimensional equations

S und

- (1) Mathematical theory of the following with application to sound :

Equations of simple harmonic, damped and forced vibrations. Resonance. Composition of simple harmonic vibrations. Beats. Lissajous' figures. Fourier's theorem.

Equation of wave. Reflection and refraction of wave. Interference of waves. Stationary waves. Vibrations of strings and air columns. Velocity of longitudinal waves in a gas and transverse waves on a string. Doppler's principle. Methods of measurement of frequency and of the velocity of sound. Musical sounds and noise. Musical scales and temperament. Common musical instruments: Harmonium, Sitar Violion and Tabla.

- (2) Recording and reproduction of sound in gramophone and talkies. Microphone and Loudspeaker.
- (3) Elementary ideas of the acoustics of building (non-mathematical).

Heat :

Mercury, gas and electrical thermometers and their corrections. Standard thermometers. Measurement of high and low temperatures. Expansion of solids, liquids and gases. Calorimetry; ice, steam and continuous flow calorimeters. Specific heats of gases and their measurement. Equation of adiabatic change and determination of ' γ '. Vapour pressure and its determination. Triple point. Refrigeration. Theory of the porous plug experiment. Liquefaction of gases. Conduction. Continuous flow of heat through a bar. Measurement of radiant heat. Black body, Stefan's law. Solar constant and temperature of the Sun, Radiation Pyrometers.

Kinetic theory of matter, Derivation of the gas law. Ratio of specific heats of perfect gases. Vender Weal's equation, Critical constants. Continuity of state.

The two laws of Thermodynamics. Determination of J. Carnot Cycle and efficiency of heat engines. Steam and internal combustion engines. Absolute scale of temperature. Entropy. Calculation of change of entropy in simple cases. Maxwell's four thermodynamic relations and their important applications. Specific heat of saturated vapours.

Light :

Geometrical optics—Combination of thin lenses. Cardinal points. Spherical aberration and methods of minimising it. Chromatic aberration. Achromatic combination of lenses and prisms. Direct vision spectroscopic. Ramsden and Huyghens eye-pieces. The eye and defects of vision. Spectrum and spectrographs. Elementary ideas of the ultra-violet and infra-red portions of the spectrum. Line and band spectra.

Balmer series, Colour photography and tricolour printing. Velocity of light.

Physical Optics :

Corpuscular and wave theories of light. Huyghen's principle. Explanation of reflection, refraction and rectilinear propagation of light. Interference. Biprism. Newton's rings and colour of thin films. Michelson's interferometer. Fresnel diffraction phenomena, straight edge, thin wire. Fraunhofer diffraction phenomena, rectangular slit, circular disc and circular hole. Plane diffraction grating. Resolving power of a lens, telescope and microscope. Dispersive and resolving power of prism and grating. Polarisation of light. Huyghen's explanation of double refraction in uniaxial crystals. Circularly and elliptically polarised light. Rotation of plane of polarisation and Fresnel's explanation of it. Polarimeters.

Electricity and Magnetism :

Magnetic field and potential. Potential and force due to a small magnet and a magnetic shell. Action of one magnet on another. Magnetic induction. Susceptibility and permeability. Hysteresis. Paramagnetism, diamagnetism, and ferromagnetism. Terrestrial magnetism. Determination of H and the dip.

Electric field and Potential. Calculation of the potential and field in simple cases. Gauss's theorem and its applications. Force on the surface of a charged conductor. Tubes of force. Energy of the electric field. Capacity of spherical, cylindrical and parallel plate condensers. Dielectric constant. Quadrant and attracted disc electrometers. Electrostatic units and their relations to absolute and practical electro-magnetic units. Primary, secondary and standard cells. Magnetic fields due to electric currents. Force on electric currents in a magnetic field. Different types of galvanometers, voltmeters, ammeters and wattmeters. Ballistic galvanometer, Kirchhoff's laws and their application to Wheatstone's net. Carey Foster's bridge. Measurement of high and low resistances. Potentiometer. Electrolysis. Joule's law. Thermo electricity. Peltier and Thompson co-efficients and their relation to thermo-electric power. Piezoelectric effect. Electromagnetic induction. Self and mutual inductance. Growth and decay of currents. Induction Coil. Elementary theory of dynamos and motors. Alternating currents. Impedance and reactance. Power factor. Choke coil. Transformer. A.C. ammeters and voltmeters. Charge and discharge of a condenser. Electric oscillations. Generation and detection of electromagnetic waves. Three electrode valve. Characteristic curves of triodes. Simple receiving and transmitting sets. Discharge of electricity through gases. Cathode rays. Positive rays. Determination of e/m and charge of

electron. Production of X-rays. Photo-electric effect and the principal of talking pictures. Elements of radio activity. Isotopes. General ideas of proton, neutron, positron and atomic structure.

Note : Any good text book covering the syllabus may be followed.

Experiments in Practical.

1. Searle's method for Young's Modulus and Modulus of torsion.
2. Young's Modulus by bending of a bar.
3. Determination of moments of inertia.
4. Surface tension by capillary tube.
5. Modulus of torsion by (a) statical method and (b) dynamical method.
6. Co-efficient of viscosity of a liquid by capillary flow method.
7. Sonometer.
8. Thermal conductivity of a metal.
9. J by mechanical method.
10. Sextant.
11. Refractive index by spectrometer.
12. Wavelength of light by Newton's rings.
13. Wavelength of light by diffraction grating.
14. Variation of magnetic field due to a circular current along the axis.
15. Resistance of a galvanometer by Thomson's method.
16. Resistance of a cell by Mance's method.
17. Resistance of accumulators.
18. Carey Foster's bridge.
19. The use of potentiometer to determine the resistance of (a) a resistance coil, and (b) a primary cell.
20. Calibration of voltmeter by potentiometer.
21. Calibration of ammeter by potentiometer.
22. Measurement of thermo e. m. f. by potentiometer.
23. Ballistic constant of a galvanometer.
24. Dip by earth inductor.
25. Electro chemical equivalent of copper.
26. ' J ' by an electrical method.

27. Determination of the frequency of alternating current (where A. C. supply is available).
28. Characteristic curve of a triode valve.
And at least any five of the following :
 1. Surface tension either by Jager's method or by the detachment of a plate.
 2. Kundt's tube.
 3. Melde's experiment.
 4. Frequency of a graphical method.
 5. Ratio of two specific heats of air by Clement and Desorme's method.
 6. Weight thermometer.
 7. Focal length and nodal points of a combination of two lenses.
 8. Wave length by biprism or Lloyd's mirror.
 9. Resolving power of a telescope.
 10. Photometry.
 11. Strength of sugar solution by a polarimeter without inversion.
 12. Platinum resistance thermometer.
 13. Conversion of a galvanometer into an ammeter or voltmeter.
 14. Determination of impedance.
 15. The production of electromagnetic waves by single valve circuits and their detection.

APPENDIX B

(*Ref. Fac. of Science Res. Nos. 8, 9 and 20 of Nov. 6, 1958*)

Minutes of a meeting of the Board of Studies in Chemistry, held on 8th & 9th May, 1958 at 12 30 P. M. and 8-00 A. M., respectively, at the University Office, Jaipur.

Present :

1. Dr. R. S. Saxena
2. Dr. G. V. Bakore
3. Shri S. S. Dube
4. Dr. R. L. Mittal (*Co-opted*)

1. Dr. Ram Sahai Saxena was elected Chairman for the meeting in absence of Dr. S. D. Arora (Convener) who could not be present.
2. The Syllabuses & text-books for the following examinations were discussed and recommended :

(i) Pre-University Course—*Appendix-I*.

(ii) 1st Year of the Three year Degree Course—*Appendix-II* .

(iii) 2nd and 3rd Year of the Three Year Degree-Course
Appendix-III.

Resolved to recommend that no change be made in the syllabus for M. Sc. (Previous) Examination of 1960, and B. Sc. and M. Sc. Final Examinations of 1961.

3. Under Section 34 (iv) of the University Act, Dr. G.V. Bakore was elected as member to serve on the Committee for selection of examiners.
4. The panel of examiners for 1958-59 was revised.
5. No comments were necessary for the question papers set for the B. Sc. & M. Sc. examinations of 1958.
6. The Board considered letters No. 1199 and 1794 dated the 8th February & 28th February 1958, respectively, from the Principal, Jaswant College, Jodhpur and letter No. Nil dated the 28th February 1958 from Dr. K. M. Gupta, Head of the Botany Department, Jaswant College, Jodhpur in connection with the assignment of marks on the Practical note books for the B. Sc. practical examinations and *resolved to recommend that*

the internal examiner should award marks on practical record in consultation with teachers concerned.

7. The Board considered letter No. FT/1-17 (49)/55-1641 dated the 22nd April 1957 from the Administrative Officer, Central Food Technological Research Institute, Mysore regarding recognition of the Associateship course in Fruit Technology as equivalent to the M. Sc. degree of this University (referred by the Board of Studies in Botany).

Resolved that the associateship course in Fruit Technology of Mysore University be not recognised as equivalent to M. Sc. degree of Rajasthan University.

8. As most of the senior members of the Board—Dr. S. D. Arora, Dr. R. D. Gupta, Dr. S. S. Joshi and Dr. A. K. Bhattacharya—were not present, it was *resolved that* the consideration of items 7 & 8 of agenda (given below) be postponed till next meeting of the Board :—

Item No. 7—A panel of four persons as required under Ordinance 135, for appointment of referees to examine the thesis (submitted for the award of Ph. D. Degree) in the subject :

“Studies on the Hide & Skins Proteins.

Item No. 8—While perusing the mean of marks of M. Sc. Thesis, worked out from the awards of internal and external examiners, the Vice-Chancellor observed that there was a great difference between the marks awarded by the external and internal examiners in thesis. Mostly internal examiners, who are supervisors of the candidates award exceptionally high marks to the examinees as compared with the awards of the external examiners, and as such desired to consider either to abolish thesis or place some check on such glaring divergence of standards.

Ram Sahai Saxena
Chairman.

Appendix I

(Ref. B. O. S. in Chemistry Res. No. 2 (i) of may 8 & 9, 1958)

Syllabus for the Pre-University Course.

Theory.

1. *Chemical change :*

Physical and Chemical changes, mixtures and compounds. Elements. The law of constant composition. The law of Multiple proportions. The Law of conservation of Mass.

2. *Gas Laws :*

Boyle's Law, Charles Law, Combined Gas equations. Graham's Law of diffusion. Dalton's Law of Partial Pressure.

3. *Atomic Theory :*

Atomic Theory and Fundamental Laws of Chemistry. Gay Lussac's Law of combining volumes. Avogadro's hypothesis. The relation between vapour density and molecular weight. Determination of vapour density by the Victor Method. Gram molecular—Volume of a gas at N. T. P.... Elementary ideas—structure of the Atom. Electrons, Protons. Neutrons.

4. *Equivalent Weights :*

Definition of equivalent weights of substance. Equivalent weight by hydrogen displacement. Oxide Method. Chloride Method.

5. *Atomic Weights :*

Definition of Atomic Weight. Atomic weight from Molecular weights of volatile compounds. Dulong and Petit's Law. Atomic weight (exact) from equivalent weight and approximate Atomic weight.

6. *Formulae and equations :*

Symbols and Formulae—Equation. Deduction of Formulae. Chemical Calculations.

7. Thermal Dissociation—Le-Chatelier's Principle.

8. Electrolysis, Ionic Theory, solubility product and their application in qualitative analysis in an elementary way. Hydrolysis of salts. Neutralisation.

Oxidation and reduction processes from ionic and valency point of view.

9. Elementary ideas about colloids.

10. *Oxygen :*

Preparation of Oxygen. Properties and Uses. Oxides, Oxidation and Reduction.

11. *Hydrogen :*

Methods of preparation of Hydrogen. Properties of Hydrogen. Uses, diffusion of gases. Graham's Law of Diffusion.

12. *Acids, Bases, Salts :*

Elementary account of the electrolytic dissociation theory.

13. *Water :*

Volumetric composition. Occurrence of Water. Properties of Water. Purification of water for Town supply. Hard water. Softening of water. Hydrates.

14. *Hydrogen Peroxide :*

Preparation, properties and uses.

15. *Ozone :*

Preparation, properties and uses.

16. *The Halogens :*

Preparation, properties and uses of Chlorine, Bromine, Iodine. Preparation and properties of HCL, HBr, and HI and their salts.

17. *Sulphur :*

Occurrence, Extraction; Allotropy. Properties and uses of Hydrogen Sulphide. Sulphur Dioxide. Preparation, properties and uses. Sulphurous acid and sulphites. Sulphuric Acid. Manufacture—Contact process. Catalysis. Properties and uses of sulphuric acid.

18. *Nitrogen :*

Occurrence. Preparation and Properties and Uses. Ammonia—Preparation, properties and uses. Ammonium salts. Nitric Acid. Preparation, properties and uses.

19. *Phosphorus :*

Occurrence. Manufacture, Properties of Yellow and Red Phosphorus. Uses of Phosphorus. Phosphorus Pentoxide. Ortho Phosphoric acid. Super-phosphate.

20. *Carbon :*

Occurrence : Different forms of carbon. Carbon-di-oxide—Preparation. Properties and uses. Carbonates. The Bunsen Burner.

21. *Preparation, Properties and Uses of the following compounds :*

Sodium Carboate, Sodium Hydroxide, Lime, Slaked Lime, Bleaching Powder, Plaster of Paris, Potassium Chlorate.

Books recommended :

1. E. J. Holmyard : Elementary Chemistry.
2. Inorganic Chemistry by L. M. Mitra.
3. Inorganic Chemistry by De (Mandal Bros., Calcutta).
4. Inorganic Chemistry by Jiodal and Kumar (Ram Narain Lal)
(Hindi edition is also available).
5. Intermediate Chemistry by Lowry and Cave! (Macmillan & Co.).
6. F. Prescott : Intermediate Chemistry, Inorganic and Physical.

Practical Work

Students will be examined in Practical Chemistry.

Students are expected to perform the following experiments in the laboratory. An account of each experiment must be written by the students in a special note-book, which will be examined by the examiners. This note-book should be kept in the charge of laboratory instructor and each account of an experiment should be corrected, signed and dated by him. The principal of a college will be responsible for the production of this note-book when demanded by the proper authorities.

The practical course is as follows :—

1. Such practical work as is required for the High School Examination.
2. Analysis of simple salts soluble in water or hydrochloric acid composed of acids and bases mentioned in the following list :
Ag, Pb, Hg, Cu, Cd, Bi, As, Sb, Sn, Fe, Al, Cr, Ni, Co, Zn, Mn, Mg, Ca, Sr, Ba, Na, K, NH_4 , Cl, Br, I, ClO_3 , SO_4 , SO_3 , NO_2 , PO_4 , S, CO_3 , C_2 , O_4 and acetate (dry & wet methods).
3. Acidimetry and alkalimetry—standardisation of HCL and NaOH—Iodicator—Estimation of sodium carbonate.

Note : In practicals the candidates are expected to identify two simple salts and to perform one volumetric exercise.

Appendix II

(Ref. B. O. S. in Chemistry Res. No. 2 (ii) of May 8 & 9, 1958)

Syllabus for the 1st Year of the Three-Year Degree Course.

Theory.

1. General :

The outlines of the Periodic Law studied from elements prescribed in the course. Elementary ideas regarding the structure of atoms and valency considered from the stand point of periodic law.

The course prescribed for Pre-University Examination.

2. Inorganic :

Preparation and important properties of the following elements and compounds :

The atmosphere, the effects of animal and vegetable life upon its composition, ammonia, nitric acid and nitrates, nitrous acid and nitrites, nitrous and nitric oxides, nitrogen peroxide and pentoxide, carbon, carbon dioxide, carbon monoxide, elementary ideas about combustion and structure of flame, coal, gas, water and producer gas, oxy-chlorides, chlorine peroxide, chloric acid and chlorates.

Phosphorus, hydrogen phosphide, phosphorus trioxide, and pentoxide and orthophosphoric acid.

Silica, Glass.

General principles of metallurgy and of methods used for the extractions of metals from various types of ores. Various types of furnaces required, in metallurgical operations.

Sodium, potassium, their hydroxides, chlorides, nitrates, carbonates and sulphates.

Calcium, strontium, barium, magnesium and zinc and their oxides, hydroxides, chlorides, sulphates and nitrates.

Lead, the outlines of its metallurgy, its chlorides, sulphate, nitrate, acetate and white lead.

Copper, the outlines of its metallurgy, its oxides chlorides, Sulphate, nitrate and sulphides.

Iron, the outlines of its metallurgy, cast iron, steel and wrought iron, its oxide (Fe O , $\text{Fe}_2 \text{O}_3$, $\text{Fe}_3 \text{O}_4$). Chlorides, sulphates and sulphides of iron.

Mercury, its oxides, chlorides, nitrates and sulphides. Aluminium, the outlines of its metallurgy, its oxide, chloride and sulphate.

Arsenic, antimony and their hydrides, oxides, chlorides and sulphides. Tin, its oxides, chlorides and sulphides. Silver, the outlines of its metallurgy, its oxide, chloride, bromide, iodide, nitrate and sulphate.

Photography and silvering of mirrors.

Proof of the composition of the following :—

Water, Ozone, atmosphere, ammonium nitric oxide, nitrogen peroxide, carbon monoxide, carbon dioxide, hydrochloric acid, hydrogen sulphide, sulphur dioxide.

Course provided for Pre-University Examination.

3. *Organic.*

A—Purification of organic compounds explaining the processes such as fractional distillation, steam distillation, extraction with solvents.

B—The preparation, important properties and structure of the following compounds :—

1. Methane and ethane.
2. Methyl alcohol and ethyl alcohol.
3. Methyl chloride, methyl bromide, methyl iodide, ethyl chloride, ethyl bromide, ethyl iodide.
4. Chloroform and iodoform.
5. Formaldehyde, acetaldehyde and acetone.
6. Formic acid and acetic acid.
7. Methylamine and ethylamine.
8. Methyl and ethyl acetates.
9. Acetamide, acetyl chloride and acetic anhydride.
10. Ethylene and acetylene.
11. Coal-tar distillation, benzene, toluene, nitrobenzene, phenol, aniline, benzyl alcohol, benzaldehyde and benzoic acid, benzoyl chloride.
12. Ether.
13. Glycerol.
14. Oxalic acid, and
15. Urea.

C—Preparation and properties of tartaric acid, starch, cane sugar, grape sugar, fruit sugar.

D—Manufacture of sugar, alcohol, wood spirit, vinegar, petroleum and scap.

Practical Work.

Students are expected to perform the following experiments in the laboratory. An account of each experiment must be written by the students in a special note-book, which will be examined by the examiners. This note-book should be kept in the charge of laboratory instructor and each account of an experiment should be corrected, signed and dated by him. The Principal of a college will be responsible for the production of this note-book when demanded by the proper authorities.

The practical course is as follows :—

1. Such practical work as is required for the Pre-University course.
2. Analysis of a mixture (soluble in water and hydrochloric acid) of four radicals, two basic and two acidic not containing two metals of the same group and not containing a phosphate or an oxalate, or the following combination of interfering acidic radicals :—
 - a) Sulphite and Sulphide.
 - b) Sulphite and Sulphate.
 - c) Sulphide and Sulphate.
 - d) Sulphite and Nitrate.
 - e) Nitrite and Nitrate.
 - f) Nitrate and Bromide.
 - g) Carbonate and Sulphite.
 - h) Nitrite and Iodide.
 - i) Chloride and Bromide.
 - j) Bromide and Iodide.
 - k) Iodide and Chloride.
3. Preparation and purification of simple salts involving no special difficulty.
4. Simple gravimetric experiments such as change in mass on oxidation of magnesium, change of weight on heating

(1) barium chloride, (2) copper carbonate, and (3) ferrous ammonium sulphate. Titration of potassium permanganate with oxalic acid or with ferrous iron. Preparation of standard solutions by weighing oxalic acid and sodium carbonate required for the above volumetric exercises.

5. Determination of melting and boiling points of organic compounds.
6. Qualitative detection of nitrogen, sulphur, chlorine, bromine or iodine, alone or together, in an organic compound.
7. Semi-Micro analysis is permissible in analytical work.

Books recommended :

1. Inorganic Chemistry by L. M. Mitra.
2. Inorganic Chemistry by De (Mandal Bros., Calcutta).
3. Inorganic Chemistry by Jindal & Kumar (Ram Narain Lal).
4. Intermediate Chemistry by Lowry & Cavel (Macmillan & Co.).
5. F. Prescott : Intermediate Chemistry, Inorganic and Physical, 4th Ed.
6. E. J. Holmyard : Elementary Chemistry.
7. Organic Chemistry Pts. I & II by Parkin & Kippin (W. & R. Chambers, Ltd., London).
8. Organic Chemistry by Tiwari and Mehlotra (Shri Ram Mehra and Co., Agra).
9. Organic Chemistry by Prescott and Ridge (University Tutorial Press).
10. Organic Chemistry by A. L. Agarwal.

Appendix III

(Ref. B.O.S. in Chemistry Res. No. 2 (iii) of May 8 and 9, 1958)

Syllabus for the 2nd & 3rd year of the three-year degree course.

The final examination in Chemistry at the end of 3rd year will comprise two papers and a practical examination. The titles of papers shall be as follows :—

Paper I—Inorganic and Physical.

Paper II—Organic and Analytical.

The course prescribed for the first year degree examination together with the following :—

- Paper I—Physical Chemistry and Inorganic Chemistry.

II Year—Physical Chemistry :

1. Ideal gas laws : The Laws of Boyle, Charles, Gay Lussac, Dalton, Graham, Vapour densities : Experimental determinations by the methods of Regnault, Dumas, Hofmann and Victor Meyer. Avogadro's hypothesis. Molecular weights of gases and vapours. Limiting densities.

2. Kinetic theory of gases. The behaviour of ideal gases. The equation of state of ideal gases from kinetic theory. Mean molecular velocity and mean free path. Collisions between molecules of the same kind. Real gases. The equation of state of van der Waals.

3. Vapour pressures of solutions. Raoult's Law. Measurements of vapour pressure differences. Determination of the molecular weights of a non volatile solute by cryoscopic and ebullioscopic methods. Osmotic pressure and its relation to the vapour pressure of dilute solutions. Measurement of osmotic pressure. Isotonic solutions.

4. Exothermic and endothermic reactions. Reversible reactions. The influence of temperature on reactions. The Le Chatellier—Braun Principle. Association and dissociation. The law of mass action : Enunciation and application to systems like dinitrogen tetroxide, hydrogen iodide, ammonium chloride, phosphorus pentachloride and calcium carbonate, Order and molecularity of reactions. Reactions of first and second order.

III Year—Physical Chemistry.

1. Electrical conductivity of aqueous solutions. Faraday's laws of electrolysis and their significance; use in determining equivalents. Ionic theory. Electrolytic dissociation and the Arrhenius concept. Equivalent

and molecular conductivities. Mobility of ions. Kohlrausch's law. Transport numbers. Strong and weak electrolytes. Debye-Huckel theory of strong electrolytes, treated in an elementary manner. Ostwald's dilution law. Hydrogen ion concentration; its measurement by using indicators, conductivity, hydrogen electrode, glass electrode. Solubility products and its analytical applications. Hydrolysis. Buffer solutions. Redox reactions. Modern concept of acids and bases, strength of acids and bases. Theory of indicators

2. Elements of catalysis, colloids, and spectrum analysis.

3. The relation of physical properties to chemical constitution. Elements of Phase Rule dealing with system of one component only.

4. Distribution and partition coefficient.

5. Numerical problems of easy nature.

II—Year *Inorganic Chemistry*.

The occurrence, preparation and properties of the following elements and their important compounds, treated especially with regard to periodic classification. (Outlines of the main metallurgical processes of the metals indicated by an asterisk) Hydrogen, Argon, Helium *Li, *Na, *K, *Cu, *Ag, *Au, Mg, Ca, Sr, Ba, Ra, *Zn, Cd, *Hg, B, *Al, C, Si, Sn, *Pb.

III Year—*Inorganic Chemistry*.

The occurrence, preparation and properties of the following elements and their important compounds, treated especially with regard to periodic classification. (Outlines of the main metallurgical processes of the metals indicated by an asterisk) N, P, As, Sb, Bi, O, S, *Cr, F, Cl, Br, I, Mn, *Fe, Co, *Ni and *Pt. Principal chemical manures, Outlines of the nitrogen cycle.

Paper II—Organic & Analytical.

Organic—II Year.

The rise, the development and the characteristics of organic chemistry. Methods of purification and tests of purity of organic substances. Methods of ultimate analysis, qualitative and quantitative. Determinations of empirical formula and molecular weights. Structural formula. Homology and Isomerism. The occurrence, the preparation, the properties and the structure of the following:—

Acyclic hydrocarbons—saturated up to pentane and unsaturated—the first 3 members. The petroleum industry. Halogen derivatives, mono, di, tri-tetra, etc., difference between, electrovalent and covalent bonds, polar and non-polar compounds and their bearing on the activity of the halogen compounds.

Alcohols—Saturated (the first colour). Industrial alcohol (Fermentation and elementary knowledge of enzymes. Yeast, bacteria and moulds), glycol, glycerol and their derivatives. Manufacture of glycerol and its nitrates.

Ethers. Aldehydes and ketones

Monobasic fatty acids—Saturated (up to butyric), vinegar, soaps, candles, and their manufactures, oils and fats. Acid halides, anhydrides, amides and esters.

Mercaptans.

Amines, nitro-paraffins, cyanogen and its derivatives, urea and ure des.

Organo-metallic compounds of zinc and magnesium, and their use in synthesis.

Haloid acids, cyanetic acids, amino-acids, hydroxymono basic acids, glycolic and lactic. Optical isomerism. Ketonic acids (aceto-acetic). Tautomerism.

Dibasic acids (carbonic, oxalic, malonic and succinic) and their derivatives. Acids, malic, tartaric and citric.

Organic—III Year.

Glucose, fructose, sucrose, starch and cellulose (only a general view of occurrence, properties and reactions). Manufacture of sugar, paper and cellulose derivatives.

Proteins, their occurrence and general characteristics in an elementary way.

Cyclic aromatic hydrocarbons, benzene, toluene, and naphthalene. Coal gas and coal-tar distillation, characteristic of aromatic compounds.

The following derivatives of the above three hydrocarbons.

The halogen, the nitro, the amino derivatives and the sulphonates. The Diazo reaction

Phenol, catechol, resorcinol, phrogallol, quinol and the naphthols benzyl alcohol, benzaldehyde, acetophenone, benzo-phenone, quinone, benzoic acid, benzoyl chloride. Salicylic and phthalic acids, furan, thiophene and pyrrole. Pyridine, its homologues and derivatives. Quinoline and Iso-quinoline. Simple alkaloids piperine and conine. Nomenclature of organic compounds, general system and trivial names.

III Year—Analytical:

Physico-chemical principles involved in qualitative and quantitative work prescribed for practical.

Practical.

II Year :

Qualitative analysis of mixture of substances containing not more than four of the following radicals, positive or negative, by dry and wet methods :

NH_4 , Na, K, Mg, Ca, Sr, Ba, Zn, Mn, Ni, Al, Cr, Fe, Bi, Hg, Cd, As, Sb, Sn, Pb, Ag, CO_3 , S, SO_3 , SO_4 , F, Cl, Br, I, NO_2 , NO_3 , ClO_3 , also borate, acetate, oxalate and phosphate.

Acidimetry and alkalimetry, iodometry using thiosulphate, arsenite, permanganate, dichromate and copper sulphate. Titration of iron with potassium permanganate, chromate and dichromate. Standardization of permanganate by oxalic acid. Potassium Tetraoxalate and sodium Oxalate. The volumetric determination of silver as chloride and as thiocyanate also using adsorption indicators like eosin and Fluorescein.

III Year.

Gravimetric estimation of Ba, Cu, Ag, Pb, Zn, Fe, chloride and sulphate. Semi-micro analysis is permissible in analytical work.

Systematic identification of the following organic compounds, including (1) the determination of their boiling or melting points, (2) the detection of the elements contained, (3) the application of tests characteristic of the groups contained and of the compounds themselves, and (4) wherever possible, the preparation of a solid derivative in a pure condition :—

Benzene, Toluene, Naphthalene, Chloroform, Iodoform, Methanol, Ethanol, Phenol. Resorcinol, Pyrogallol B-Naphthol, Glycerol, Ether, Formaldehyde, Acetaldehyde, Chloral hydrate, Benzaldehyde, Acetone, Acetophenone, Benzo-phenone, Hydroquinone, Aniline, p-Toluidine, p-Chloro-aniline, m-Nitro-aniline, m-di-nitro benzene, 2:4 dinitro toluene and p-nitro phenol, α -Naphthylamine, acids-Formic, Acetic, Butyric, Oxalic, Succinic, Tartaric, Citric, Benzoic, Salicylic, Sulphanilic, Phthalic, Cinnamic, Ethyl acetate. Ethyl-Benzate, Glucose, Fructose, Sucrose. Starch, Acetamide, Urea, Benzamide, Tri-Bromo-Aniline, Acetanilide, Tri-Bromophenol, Nitrobenzene, Phenylhydrazine, hydrochloride.

Books recommended :

1. Inorganic :

- (i) Mellor and Parkes : Modern Inorganic Chemistry.
- (ii) Portington : Text Book of Inorganic Chemistry.
- (iii) Smith & Kendal : Introduction to Inorganic Chemistry.
- (iv) Caven & Lander : Systematic Inorganic Chemistry.

2. Organic :

- (i) Jogindra Singh : Modern Organic Chemistry.
- (ii) Read : Text-book of Organic Chemistry.
- (iii) Sarkar and Rakshit : Organic Chemistry.
- (iv) Prescott & Ride : Organic Chemistry.
- (v) Cohen : Theoretical Organic Chemistry.

3. Physical :

- (i) Findley : Introduction to Physical Chemistry.
- (ii) Palit : Elementary Physical Chemistry.
- (iii) Sugden and Lowry : Physical Chemistry.

Reference Books :

1. A. J. Mee : Physical Chemistry.
2. Glasstone : Elements of Physical Chemistry.
3. Sen Gupta and Sen : A Text book of Physical Chemistry.
4. Denials : Outlines of Physical Chemistry.

Analytical :

1. Vogel : Text-book of Inorganic Qualitative Analysis.
2. Vogel : Text-book of Inorganic Qualitative Chemistry.
3. Newth : Chemical Analysis.
4. Satya Prakash and Tewari : A Text Book of Analytical Chemistry.
5. R. D. Gupta : Analytical Chemistry.
6. Waters : Introduction to Practical Organic Chemistry.

For reference :

1. Ostwald : Foundation of Analytical Chemistry.
2. Findlay : One Hundred Years in Chemistry.
3. Partington : General and Inorganic Chemistry for University Students.

APPENDIX C

(Ref. Fac. of Sc. Res. Nos. 8, 10 & 20 of Nov. 6, 1958)

Minutes of a meeting of the Board of Studies in Botany, held on 9th and 10th May, 1958 at 12 30 p. m. and 8 a. m., respectively at the University Office, Jaipur.

Present:

1. Dr. V. Puri
2. Dr. P. N. Mehra
3. Dr. K. M. Gupta
4. Prof. Shanti Sarup
5. Dr. S. Venkatcharya
6. Prof. B. Tiagi
7. Dr. B. N. Mulay (*Convener*)

1. The Board recommended syllabus for Pre-University course in Biology (Botany Portion) for 1960 as follows:

Pre-University Course in Biology.

1 paper only of 3 hours duration of 100 marks consisting of:

Section A	Botany
Section B	Zoology

(4 teaching periods and 6 practical periods per week)

Five questions to be answered not more than three from any of the two sections.

Section A—Botany:

1. External characters and functions of the various plant organs (roots, stem, leaf, etc.).
2. External characters and functions of various organs of a flower and their modification.
3. Elementary knowledge of the life history of a flowering plant.
4. Plants and human welfare.
Fibre plants, medicinal plants, timber trees, fruits and cereals etc.

Practical:

A record must be kept of the following and other useful observations:

1. Examination and dissection of plant and plant parts; common flowers and their floral parts.

2. Spottings, 4 only.

Books recommended :

Text-books—

1. Lawson, J. M. and Sahni, B: Text Book of Botany
(University Tutorial Press).
2. Brimble, L. J. F.: Intermediate Botany (Macmillan & Co.).
3. Scott, D. H.: Structural Botany, Vol. I and Vol. II.
4. Priestley & Scott: Text book of Botany,

General reading :

1. Plant Form and Foundations by Fritsch and Salisbury.
 2. Introductory Biology by Sir Richard Gregory and L. F. J. Brimble (Macmillan and Co. Ltd.).
 3. Short Studies in Botany by Ganguly.
 4. Introduction to the Study of Evolution and Genetics by Shanti Sarup (The Students' Book Co., Jaipur & Jodhpur).
 5. Intermediate Botany (Families of Flowering Plants) by Shanti Sarup (The Students' Book Co., Jaipur & Jodhpur).
- (b) 1 year of the three year degree course-Biology
(for combination of Physics, Chemistry & Biology).

Syllabus 1959-60.

(4 theory periods and 6 practical periods).

Section B—Botany :

1. The Structure of the plant cell, its contents, cell divisions, chief-types of plant tissues.
2. The morphology and the structure of root, stem, leaf, and flower. Chief types of inflorescences and fruits.
3. Structure and life histories of bacteria, spirogyra, Mucor, Moss, Fern and a typical Angiosperm.
4. Elements of plant physiology. Simple facts about absorption, transpiration, photosynthesis, respiration and growth.
5. Elementary knowledge of plant evolution and Mendelism
(Monohybrid ratio only).

Practical Work :

The description and dissection of plants. Simple staining and study of microscopical sections of plants. A study of Bacteria, Spirogyra, Mucor, Moss and Fern. Mounting of vegetable

tissues, including sporangia of ferns, sperangia of mucor and spirogyra.

Books suggested :

Text-books—

1. Lawson, J. M. and Sahni, B.: Text-book of Botany
(University Tutorial Press).
2. Brimble, L. J. F.: Intermediate Botany (Macmillan & Co.).
3. Scott, D. H.: Structural Botany, Vol. I and Vol. II.
4. Priestley and Scott: Text Book of Botany.

General reading :

1. Plant Form and Foundations by Fritsch and Salisपुरy.
2. Introductory Biology by Sir Richard Gregory and L. F. J. Brimble (Macmillan and Co. Ltd.).
3. Short Studies in Botany by Ganguly.
4. Introduction to the Study of Evolution and Genetics by Shanti Sarup (The Students' Book Co., Jaipur & Jodhpur).
5. Intermediate Botany (Families of Flowering Plants) by Shanti Sarup (The Students' Book Co., Jaipur & Jodhpur).
6. Hill, Overholts and Prop.: Botany (Mc Graw Hill).
7. Sinnot Etal: Botany Principles and Problems
(McGraw Hill).

(c) 1 year syllabus of the three years degree course.

One paper of three hours duration carrying 100 marks and a practical of 50 marks of 4 hours duration.

(14 theory periods and 4 practicals per week).

Botany :

1. The structure of the plant cell, its contents, cell divisions, chief types of plant tissues.
2. The morphology and the structure of root, stem, leaf and flower. Chief types of inflorescences and fruits.
3. Structure and life histories of Bacteria, Spirogyra, Mucor, Moss, Fern, and a typical Angiosperm.
4. Classification and economic importance of Guciferai Mal, Leg, Ysolonau Compositae, Liliaceae.
5. Elements of plants physiology. Simple facts about absorption, transpiration, photo synthesis, respiration and growth.

6. Elementary knowledge of the theories, plant evolution, and Mendelism. (Monohybrid ratio only).
7. An elementary knowledge of xerophytes and hydrophytes.

Practical Work :

Students are expected to keep a record of all practical work which they will submit at the practical examination.

The description and dissection of plants. Simple staining and study of microscopical sections of plants. A practical study by microscopical examination and otherwise of Bacteria, Spirogyra Mucor, Moss, Fern and the vegetative and reproductive organs of Angiosperms treated in an elementary manner. Mounting of vegetable tissues includes mounting of sporangia of ferns, tomata, mineral, crystals, sporangia of Mucor, Spirogyra filament.

Interpretation of simple experiments of plant physiology.

Books suggested :

Text-books —

1. Lawson, J. M. and Sahní B : Text-book of Botany
(University Tutorial Press).
2. Brimble L. J. F. : Intermediate Botany (Macmillan & Co.).
3. Scott, D. H. : Structural Botany, Vol. I and Vol. II.
4. Priestley and Scott : Text Book of Botany.

General reading :

1. Plant Form and Foundations by Fritsch and Salisपुरy.
2. Introductory Biology by Sir Richard Gregory and L. F. J. Brimble (Macmillan and Co. Ltd.)
3. Short Studies in Botany by Ganguly.
4. Introduction to the Study of Evolution and Genetics by Shanti Sarup (The Students' Book Co., Jaipur & Jodhpur).
5. Intermediate Botany (Families of Flowering Plants) by Shanti Swarup (The Students' Book Co., Jaipur & Jodhpur).
6. Hill, Overholts and Prop. : Botany (McGraw Hill).
7. Sinnott Etal. Botany Principles and Problems (McGraw Hill),

General Scheme of B.Sc. Final Examination in Botany.

Practical Examination of 6 hours. ... 100 marks.

Two written papers of three hours each :—

Paper I—Section I—Thallophyta, Bryophyta, Pteridophyta.	}	100 marks.
Section II—Gymnosperms, Morphology of Angiosperms.		

Paper II—Section I—Taxonomy of Angiosperms, evolution and genetics.	}	100 marks.
Section II—Physiology and Ecology.		

Note :—Each paper will comprise 8 questions with 4 questions from each section. The candidate will be required to answer 5 questions but not less than 2 questions from each section.

Note :—Paper I to be taught in the 2nd year of the three year degree course for the Examination at the end of the three year degree course (1961).

Thallophyta :

Its classification into main Sub-Divisions :

Algae, Fungi, Lichens and Bacteria.

1. Algae (a) Brief life histories of the following algae typifying their various divisions : Oscillatoria (Cyanophyceae); Chlamydomonas, Volvox, Vaucheria. Chara (Chlorophyceae), Ectocarpus, (Phaeophyceae), Polysiphonia (Rhodophyceae).
(b) A brief discussion on the evolution in the thallus organisation.
(c) Origin and evolution of sex.
(d) Alteration of generations.
(e) Economic importance.
2. Schizomycetes : General characteristics of bacteria, cell structure and reproduction, modes of nutrition; roles in soil fertility, industrial importance; bacterial plant pathogens (only one or two examples); bacteria causing human diseases (a few examples).
3. Fungi (a) Life histories of the following fungi typifying their main Sub-Divisions : Albugo (Phycomycetes), Peziza, Penicillium (Ascomycetes); Agaricus, Ustilago, Puccinia (Basidiomycetes).

- (b) Mycology defined; general characteristics of fungi and their modes of nutritional role of fungi in agriculture (soil fertility and crop diseases), food (Yeasts, Morchella, mushrooms etc.), antibiotics (Penicillium), a reference to Industry (Preparation of Alcohol and organic acids).
- c) (i) Plant pathology defined; disease defined; types of disease symptoms; kinds of plant diseases, (Virus, bacterial and fungal control measures briefly).
- (ii) Detailed account of the following important crop diseases and their control measures (emphasis to be laid on the disease aspect and not on life history of pathogen); Citrus, Canker, loose smut of wheat, stem rust of wheat.

II. *Bryophyta* :

- (a) Salient features and distinction into liverworts and mosses. Brief life histories of the following :—
Riccia, Marchantia, Anthoceros (Liverworts); Funaria (Moss), Sphagnum.
- (b) Alteration of generations; Evolution of the sporophyte (along Riccia, Marchantia, Anthoceros, Sphagnum and Funaria), position between Thallophyta and Pteridophyta.

III. *Pteridophytes* :

- (a) Salient features and broad classification. Brief life histories of Selaginella, Equisetum and Pteris Maesilea.
- (b) Evolution of stele in ferns.
- (c) Alteration of generations.
- (d) Fossil formation and some fossil pteridophytes (Psilophytales).

IV. *Gymnosperms* :

- (a) Salient features and broad classification. Brief life histories of the following :— Cycas (Cycadophyta), Pinus (Coniferophyta).
- (b) Alteration of generations.
- (c) Economic importance (Timber, resin, cellulose pulp).

V. *Angiosperms* :

- Seed* : Economic importance.

Root : Origin of lateral roots; edible roots.

Stem : Apical meristem; stem as a means of natural multiplication of plants, advantages and disadvantages of such multiplication to the plants and man; methods of vegetative propagation of commercial plants, application of hormones for promoting rooting in cutting; economic importance (edible).

Flower : Development from primordium; taxonomic value of various floral parts; development of pollen grain and male gametophyte, development of ovule and typical embryo-sac, fertilization and need for meiosis, embryo development in *Capsella bursa-pastoris*; endosperm and its role; seed and fruit formation.

For the III year (Final) of the three-year degree course (1961) Paper II.

Classification of Angiosperms : Concept of species, genus, family and order; classification according to Bentham and Hooker's system (only the salient features); evolutionary tendencies in flower; criteria for determining primitive and advanced nature of a family. Diagnostic features and economic importance of the following families :

Ranunculaceae-Ranunculus.

Papaveraceae (Argemone, Papaver, Fumaria).

Capparidaceae. (Capparis & Gynandropsis).

Cruciferae-Brassica, Senebiera, Capsella.

Caryophyllaceae (Silemaria, Sparganium).

Malvaceae-(Althaea, Malva, Gossypium).

Rutaceae-Citrus, Murraya.

Leguminosae-Acacia, Cassia, Lathyrus, Dalbergia.

Rosaceae-Prunus, Pyrus.

Cucurbitaceae-Luffa, Cucurbita, Cucumis.

Myrtaceae.

Umbelliferae-Foeniculum, Coriandrum.

Compositae-Ageratum, Sonchus, Helianthus.

Asclepiadaceae-Calotropis, Cryptostegia.

Convolvulaceae.

Solanaceae-Solanum, Datura, Capsicum.

Acanthaceae.

Labiatae-Salvia, Ocimum.

Chenopodiaceae-Chenopodium, Salsola, Saeda.

Euphorbiaceae-Euphorbia, Ricinus, Phyllanthus.

Liliaceae-Asphodelus, Allium.

Grammineae-Avena, Triticum, Zea.

Pabancie.

Plant Physiology—

- (a) Definition; relation with Physics and Chemistry, aims of study : scope in agriculture.
- (b) Colloids; Physical properties of colloids and protoplasm; Physical nature of protoplasm (only the modern concept).
- (c) Brief idea of the following : Surface tension, absorption, imbibition, diffusion.
- (d) Osmosis : definition, differentially permeable membranes, Nature and artificial, exosmosis and endosmosis; mechanism of osmosis, osmotic pressure; diffusion pressure deficit; turgor and wall pressure and relationship between them; plasmolysis.
- (e) Transpiration; definition, mechanism, stomata (size, number and position;) diffusion of water and gases through stomata; measuring rates of transpiration; factors affecting transpiration; daily and seasonal variation in transpiration; wilting transpiration ratio; significance of transpiration.
- (f) Soil : definition and origin, mineral matter; organic matter, soil water; soil air; soil micro-organisms; with particular reference to nitrogen fixing bacteria.
- (g) Absorption of water from soil; structure, distribution and function of root hair; and idea of factors affecting the development of root hair; mechanism of absorption of soil water, passive and active absorption; root pressure; factors affecting soil water absorption; importance of water to plants.
- (h) Absorption of mineral nutrients from soil; mechanism.
- (i) Ascent of sap : path of water, mechanism of ascent of sap with particular reference to Dixon's Cohesion theory.
- (j) Enzymes : enzymes and catalysts; occurrence and distribution; general properties and kinds, examples of more important enzymes and their catalytic reaction.
- (k) Photosynthesis : Definition; importance to nongreen plants, animals and man; gaseous exchange; factors affecting the rate of photosynthesis, Blackman's law of limiting factors and its modification; plant pigments, chlorosis a warning to grower;

source of oxygen evolved in the process as revealed by tracer elements; a broad idea about the possible steps in photosynthesis; P/R ratio and crop yield.

- (l) Translocation : Significance; paths of downward and upward translocation of organic solutes and mineral elements; as revealed by ringing experiments and tracer elements; lateral translocation of solutes.
- (m) Synthesis of protoplasm. An over all idea of synthesis of protoplasm from raw materials like carbohydrates and mineral elements and nitrogen metabolism determining the role of mineral elements; specific role of some of the important elements (P, Ca, N, Mg, S, Fe, K & B); need underlying principles of manuring and rotation of crops.
- (n) Modes of plant nutrition; auto-and heterotrophic plants : saprophytic, parasitic and insectivorous plants.
- (o) Respiration : Anaerobic and aerobic respiration, possible steps in mechanism of plant respiration; plant respiration by and large the reverse of photosynthetic process; respiratory quotient, methods of measuring respiration, factors affecting.
- (p) Growth : Definition, phases of growth; meristems; physiological changes during cell division, cell enlargement and maturation; measurement of growth; factors affecting (special emphasis on growth hormones and C/N ratio); photoperiodism: Vernalization and preconditioning.
- (q) Movements: Classification (growth, turgor and hydration); geotropism and phototropism and their underlying mechanism; turgor movements in *Mimosa pudica* and its mechanism.
- (r) Seeds: Dormancy and causes, methods of breaking dormancy; conditions necessary for the germination of seeds; physiological changes during seed germination.

Plant Ecology.

- (a) Definition; aims of study, scope and relation to other sciences, environmental factors; climatic (temperature, light and seasonal distribution of precipitation); edaphic (soil; composition, texture, stable and unstable soils, soil reaction); biotic (Plants, animals and man).
- (b) Effect of environmental factors on the growth and distribution of plants and effect of growth and distribution of plants

on the environment; characteristic morpho-physiological features of meso-hydro, xero-and halo-phytes of the Rajasthan.

- (c) A general idea of the ecology of the Rajasthan; Plant succession.

Evolution and Cytogenetics.

- (a) Organic evolution : Evidence of evolution.
- (b) Theories of evolution, Darwin's theory of natural selection, obsolete De vries mutation theory.
- (c) Cell : nucleus, chromosomes, gene, mitosis and meiosis, significance of meiosis.
- (d) Mendelism : Mendels material, methods and results; Principles of dominance, segregation and independent assortment; chess-board method (dihybrid ratio); cytological basis of Mendelism.
- (e) Origin of species.
- (f) Improvement of crop plants; selection (mass and individual selection), hybridisation; induced mutations and induced polyploidy.

Practical Examination.

The practical examination will embrace: (a) examination and description of microscopic specimens; (b) examination and description of plants or parts of plants; (c) identification of specimens; (d) preparation of specimens and tissues for microscopic examination; (e) fundamental experiments in Physiology.

The candidates will be required to submit at least one plant of each family of Angiosperms, properly mounted and named, initialled and dated by their teachers, at the time of Examination.

Candidates will be required to submit their original Note-Books, initialled and dated by their teachers of their Laboratory work (drawing etc.) in order that these may be taken into account in determining the results of the examination.

Books suggested :

Hill, Overhault and Popp : Text Book of Botany.

Lowson and Sahni : Text Books of Botany. Revised by Howath and Warne, 1947.

Smith : Cryptogamic Botany, Vols. I & II, Second edition.

Newman : Evolution.

Kashyap Lahore District Flora.

Meyer and Anderson—Plant Physiology, Latest edition.

Sinnot, W & Wilron—Botany Principles and Problems.

Sinnot and Dun Dobzhausky—Principles of Genetics.

Sharp—Fundamentals of Cytology. Mundkur-Fungi and Plant diseases.

II F (i) B. Sc. O.d Scheme 1961 no change.

II F (ii) (For the M. Sc. Previous Examination of 1960 and M. Sc. Final of 1961).

Notes :— i) It is necessary for the M. Sc. students to go out at least for two excursions in a year, one to a hill station and the other near about a sea-shore.

(ii) For the M. Sc. Examination in Botany, Previous and Final there shall be five papers and a special paper or thesis. There shall be two practicals, one at the end of the first year and the second at the end of the final year.

(iii) A student, who has offered a thesis at the M. Sc. (Final) Examination in Botany and has failed, must submit a thesis on a fresh subject when he reappears at the examination.

(iv) The students must pass separately in theory and practical

There shall be five papers and a special paper or a thesis as indicated below. Out of five papers, candidates will be required to take any three papers for the Previous Examination and the remaining two papers and a special paper or a thesis for the Final Examination. There will be a practical examination in both the Previous and the Final Examinations.

Paper I—Thallophytes and plant pathology.	100
Paper II—Bryophytes, Pteridophytes & Gymnosperms	100
Paper III—Evolution, Cytology, Genetics & Plant breeding.	100
Paper IV—Angiosperms.	100
Paper V—Physiology & Ecology.	100
Special paper on any of the following :—	100

(i) Plant Pathology.

(ii) Economic Botany.

(iii) Paleobotany.

(iv) Ecology.

(v) Morphology of Angiosperms.

(vi) Genetics.

Or

Thesis.	100
*Practical (Previous).	200
*Practical (Final).	200

Paper I : Thallophytes & Plant Pathology.

- (a) Form, structure and classification of Bacteria and their economic importance.
- b The morphology, biology and life histories of typical representatives of the groups of algae and fungi.
- (c) A general account of lichens.
- (d) Symptoms of disease in plants : The causal agents of diseases like fungi; Bacteria and Viruses : Non parasitic diseases.
- (e) Physiology and bio-chemistry of algae : Economic importance of the algae.

Paper II : Bryophytes; Pteridophytes; Gymnosperms.

The study of the morphology, biology, anatomy, life histories, classification and interrelationship of the important living and fossil representatives of the above groups.

Paper III : Evolution; Cytology; Genetics & Plant breeding.

Evidences & theories of Organic Evolution, Mendelism Chromosome morphology; Mitosis and Meiosis. Importance of Meiosis; Polyploidy; Chromosome theory of heredity; Cytology and taxonomy. Pure lines; Hybrid Vigour; Bud sports; Chimeras; Interspecific and intergeneric hybridization; Plant breeding work done in India specially with reference to wheat, rice, cotton, tobacco, potato and Sugarcane.

Paper IV—Angiosperms.

- (a) Nature and origin of the flower; Microsporogenesis and megasporogenesis. Development of the gametophytes; Fer-

1. In Botany Practical 15 percent marks shall be assigned to notebooks, preparations and record of work.

2. For the M. Sc. (Previous) the practical examination shall cover the subject matter of all the papers, taken by the candidates.

3. For the M. Sc. (Final) Examination practicals will include questions on the matter of special paper or of thesis in addition to the questions based on the theory papers which are offered.

tilization; Embryo; Endosperm; Apomixis; polyembryony; Seeds and fruits. Relation of embryology to taxonomy. Phylogeny of Angiosperms.

- (b) A history of plant classification. Classification systems and their relative merits. Study of important families with special reference to local flora. Plants of economic importance in the local flora
- (c) Origin of primary tissues and their differentiation; Meristems and their activities; Mechanical tissues; Secretory tissues; Anatomy and Taxonomy.

Paper V—Physiology and Ecology.

Colloidal complex in a cell: Water relations of the cell and plants: Carbon assimilation; Heterotrophic nutrition in plants; Nitrogen metabolism; Absorption of water and mineral nutrients; Translocation of nutrients; Translocation of organic food; Enzymes and their activities; Respiration; Growth and part played by growth regulators; Physiology of development, Tracer Technique.

Ecological factors; Plant succession; Formation of climax; Vegetation of India; Reproductive capacity of plants. General idea.

Special Papers.

(A) Plant Pathology:

1. Principles of plant pathology; History; Nutrition of fungi; Isolation methods; Dissemination of diseases; Study of Physiology of parasitism; Mechanism of disease resistance; predisposition; Inheritance of resistance; Physiological specialization in fungi. Various methods of plant disease introduction and other important topics allied to the subject.
2. To study symptomatology, life history, mode of infection, annual recurrence and methods of control of various diseases of the following plants :—

Triticum, Hordeum, Oryza, Sorghum, Pennisetum, Zea, Avena, Cicer, Pison, Cajanus, Gossypium, Saccharum, Solanum tuberosum, Lycopersicum, Brassica Spp. Linum, Citrus and Thea.

3. Study of the methods of disease control in general Plant Quarantine.

4. Study of viruses with emphasis on methods of disease investigation and an account of important virus diseases of crop plants.
5. Study of bacteria with emphasis on methods of disease investigation and an account of important bacterial diseases of crop plants worked out in India.
6. Study in short of the various physiological diseases of important crop plants.

(B) Economic Botany.

A general account of the origin of cultivated plants.

A study of the distribution, economic products, structure and improvement of the following :—

1. Cereals : Triticum, Oryza, Sorghum, Zea.
2. Sugar Plants : Saccharum, Beta.
3. Plants for starch : Solanum tuberosum and Manihot.
4. Fruits : Mangifera, Carica, Musa, Citrus, Phoenix, Psidium.
5. Legumes and Nuts : Pisum Cler, Soya, Cocos, Anacardium, Juglans, Pinus, gerardiana.
6. Oil Seeds : Linum, Aleurites, Sesamum, Brassica Cocos, Arachis.
7. Beverage plants : Coffea, Thea, Theobroma, Fermented beverages.
8. Drugs : Clinchona, Aconitum, Podophyllum, Asa foetida Rheum, Aloe, Ephedra, Atropa, Belladonna, Digitalis, Eucalyptus, Artemisia, Clauiceps.
9. Insecticides : Pyrethrum, Derris.
10. Fumitories and masticatories : Tobacco, Cocoa, Opium, Hemp.
11. Latext products : Hevea, Taraxacum Palaquinum, Parthenium Cryptostegia.
12. Fibers : Gossypium Corchorus, Linum, Cannabis, Boehmeria, Agave, Cocos.
13. Paper Making Materials : Wood Bamboo, Sabai.
14. Wood : Strength and durability of woods, defects in wood, seasoning, general accounts of important Indian woods.
15. Tans and dyes : A general account with special reference to tropical plants.

16. Gums and Resins : A General account.

17. Essential Oils : A General account.

*Note :—*Those who take up any additional special paper after passing regular examination shall have to undergo practical test on the subject matter of the paper.

(C) Palaeobotany :

1. Sedimentary rocks and preservation of fossils. Corelation of the Indian Strata with the standard classification.
2. Classical discoveries of fossil plants in the World.
3. Early work on Indian fossil plants.
4. Recent discoveries in the Indian Fossil Flora with a detailed knowledge of some of the important types such as *Glossopteris*, *Dadoxylon*, *Ptilophyllum*, *Williamsonia*, *Pentoxylon*, *Azolla*, *Sahnianthus*, *Enigemocarpon* and *Palmoxylon*.
5. Modern methods of investigation.
6. Academic and Economic importance of the study of fossil plants.

(D) Plant Ecology :

Study of the plant community : Nature and Analysis :

Methods of studying vegetations.

Factors controlling Plant communities :

Climatic, Physiographic and Biological.

Plant succession and the structure of plant communities in relation to environmental factors. Plant competition.

Climax formations.

Important application of ecological concepts to agriculture and forestry.

Laboratory studies on physical and chemical properties of the soil and inter-relationship between soil and vegetation.

Field work to illustrate in the methods of vegetational analysis and measurement of environmental effects.

Regional studies of a particular area to form part of the course.

(E) Morphology of Angiosperms :

1. General survey of the external morphology and anatomy including ecological anatomy and anomalous secondary growth.

2. Recent advances in the anatomical field such as the study of meristems, woods, flowers, fruits etc.
3. Classification of Angiosperms; systems of classification and their relative merits. Modern trends in classification.
4. Origin of Angiosperms.
5. Fossil Angiosperms with special reference to Indian types.

(F) Genetics:

The history of hybridization before Mendel : Mendel's life and work : Factor hypothesis; Meiosis; Chromosome Morphology. The change in gene : The induction of gene-mutation : Genes and evolution : Pure lines; Hybrids : Polyploidy : Artificial Polyploidy : Inheritance of acquired characters : Cytoplasmic inheritance.

Distribution of Paper.

Out of the five papers candidates may take any three for the previous examination, and the remaining two papers and the special paper or thesis for the final examination. There will be two practical examinations, one at the end of the previous year and the second at the end of the final year, both of them having two hundred marks each.

Thesis.

This should be a record of the original work done by the candidate and should give a brief review on the recent literature on the problem investigated by him. Two typed copies should be submitted by the candidate a week before the examination.

Practical Examination.

The candidate is expected to show sufficient familiarity with the important representatives of the Cryptogams and Phanerogams, especially with those available locally. They should be able to find out the general and the species of the local plants with the help of the Floras. They will also be required to produce a small collection of local plants and microscopic preparation of the various representatives of the different groups of plants.

The Practical examination will include the following :—

1. The setting up of a physiological experiment.
2. The measurement of the microscopic structures with the help of a camera lucida.
3. The technique of emasculation, bagging, pollination etc.

4. Ecological anatomy.
5. Microtomy.
6. Smearing to show stages in mitosis and meiosis.
7. Viva-voce.

Fifteen percent of the total marks are reserved for the plant collections, microtome slides and journals of the student and ten percent marks are reserved for the viva-voce.

Reference Books :—

1. Fritsch, F. E. : The Structure and Reproduction of the Algae, 2 vols. (Cambridge University Press).
2. Harshberger, J. W. : A Text-book of Mycology and Plant Pathology (J. A. Churchill).
3. Butler, E. S. : Fungi and Diseases in Plants (Thacker Spink and Co.)
4. Cavers : Inter-relationships of the Bryophyta (New Phytologist).
5. Kashyap, S. R. : Liverworts of the Eastern Himalayas, 2 vols. (University of Punjab).
6. Campbell, D. H. : Mosses and Ferns. (Macmillan and Co.)
7. Smith, G. M. : Cryptogamic Botany 2 vols. (Mc Graw Hill).
8. Bower, F. O. : Primitive, Land Plants (Cambridge University Press),
9. Bower, F. O. : Filicates, 3 vols. (Cambridge University Press).
10. Eames, A. J. : Morphology of Vascular Plants (Mc Graw Hill).
11. Chamberlin, C. J. : Gymnosperms-Structure and Evolution. (University of Chicago).
12. Rendle, A. R. : Classification of Flowering Plants. 2 vols. (Cambridge University Press).
13. Scott, D. H. : Studies in Fossil Plants, 2 Vols. (A & C Blackie).
14. Scott, D. H. : Extinct Plants and Problems of Evolution (Macmillan).
15. Eames, A. J. & L. H. Macdaniells : An Introduction to Plant Anatomy (Mc Graw Hill).
16. Huxley J. : Organic Evolution, a Modern Synthesis. (Allen and Unwin, London).

17. Weaver, J. E. and F. E. Clements: Plant Ecology
(Mc Graw Hill).
 18. Braunbalt, J. : Plant Sociology : The study of plant communities (Mc Graw Hill).
 19. Haberlandt, G. : Physiological Plant Anatomy
(Macmillan & Co.).
 20. Meyers, B. S. & D. B. Anderson : Plant Physiology.
(Chapman & Hall).•
 21. Miller, B. C. : Plant Physiology (Mc Graw Hill).
 22. Tomas, M. : Plant Physiology (Mc Graw Hill).
 23. Babcock, F. B. & R. E. Clausen : Genetics in Relation to
Agriculture (Mc Graw Hill).
 24. Sinnote, W. & L. C. Dunn : Principles of Genetics
(Mc. Graw Hill).
 25. Darlington, C. D. : Recent Advances in Cytology (J. A.
Churchill).
 26. Deroberits, E. D. P. }
W. W. Nowinski & } General Cytology (W. B. Saunders & Co.).
F. A. Sax. }
 27. Schimper : Plant Geography (Clarendon Press).
 28. Stiles : An Introduction to the Principles of Plant
Physiology (Methuen & Co).
 29. Sharp : An Introduction to Cytology (Mc Graw Hill).
 30. Arnold, C. A. : An Introduction to Paleobotany (Mc Graw
Hill).
 31. Butler & Jones : Plant Pathology.
 32. Mundkur : Sungi & Plant Diseases, (Macmillan & Co.)
 33. Maheshwari, P : Embryology of Angiosperms (Mc Graw
Hill).
 34. Hill, A. F. : Economic Botany (Mc Garw Hill).
 35. Stanford, E. E. : Economic Plants (D. Appleton Century Co).
 36. Costing : Plant Communities (W. H. Freeman & Co).
 37. Johannesen Plant Microtechnique (Mc Graw Hill).
2. Under Section 34 (4) (iv) of the University Act the Board elected Dr. K. M. Gupta to serve on the Committee for Selection of Examiners in Botany.
 3. The Board revised the panel of examiners for 1958-59.
 4. The Board had no comments to offer on question papers of 1958.

5. The Board considered letters Nos. 1199 and 1794, dated the 8th & 28th February, 1958, respectively, from the Principal, Jaswant College, Jodhpur and letter No. Nil dated the 28th February 1958 from Dr. K.M. Gupta, Head of the Botany Department, Jaswant College, Jodhpur in connection with the assignment of marks on the Practical Note books for the B. Sc. Practical examinations.

Resolved to recommend that the internal examiner should award marks for the record of the students provided that he is a teacher of the subject otherwise the head of the Department should award marks in consultation with the teacher concerned.

6. The Board recommended a panel of four persons as required under O. 135 for appointment of referees to examine the thesis in the subject "Embryological Studies in the Family Orobanchaceae".

7. The Board considered the observation of the Vice-Chancellor that there was a great difference between the marks awarded by the external and internal examiners in M. Sc. thesis and as such either to abolish the thesis or place some check on such glaring divergence of standards.

Resolved that the thesis system be continued and if the internal examiner's marking is excessive by more than 15 marks in total of hundred marks his marks should be ignored and marks given by the external examiner only be assigned to the thesis, as the marks of the internal and external examiners (by doubling the marks given by the external examiners).

B. N. Mulay
Convener.

APPENDIX D

(Ref. Fac. of Sc. Res. Nos. 7, 8, 10 & 20 of Nov. 6, 1958)

Minutes of a meeting of the Board of Studies in Zoology, held on May 9 and 10, 1958, at 12.30 p. m. and 8.30 a. m. respectively, at the University Office, Jaipur.

Present :

- | | |
|---------------------------|--------------------|
| 1. Dr. M. L. Bhatia | } On 9th May only. |
| 2. Dr. D. S. Srivastava | |
| 3. Dr. P. N. Mathur | |
| 4. Dr. A. K. Datta Gupta | |
| 5. Shri S. D. Gupta | |
| 6. Shri R. K. Kaushik | |
| 7. Shri Shiva Raj Bahadur | |
- (Convener)

1. The Board recommended the courses of study in Zoology for the following examinations (*vide Appendices*).

The Board further recommended that there should be a University Examination at the end of the 2nd year degree course also, as is being done in the Faculties of Arts and Commerce already.

- (a) Pre-University course Examination (*vide Appendix I*).
 - (b) 1st Year Examination of the 3 year Degree Course, 1959 and 1960. (*vide Appendix II*).
 - (c) 2nd year Examination of the 3 Year Degree Course (*vide Appendix III*).
 - (d) Final Year Examination of the 3 Year Degree Course, 1961 and 1962 (*vide Appendix IV*).
 - (e) Biology for the 3 Year Degree Course (to be done in the first year) (*vide Appendix V*).
2.
 - (a) Resolved to recommend that the courses of study for the B.Sc. Examination of 1961 be the same as for the examination of 1960.
 - (b) Resolved to recommend that the existing courses of study for the M. Sc. (Previous) Examination and the M. Sc. (Final) Examination be repeated for the Examinations of 1960 and 1961, respectively.

3. Under Section 34 (4) (iv) of the University Act the Board elected Dr. A. K. Datta Gupta to serve on the committee for selection of examiners in Zoology.

4. The Board revised the panel of examiners for 1958-59.

5. The Board went through the question papers set for the Examinations of 1958 and offered the following comments :

(a) The setter of the question-paper I of M. Sc. (Final) ignored altogether Section B (History of Biological Thought). This mistake has been repeated for the second time. It appears the examiner did not go through the syllabus where the division of the question paper into Section A and B is clearly mentioned. The University should take necessary steps to avoid this in future and as a precautionary measure should point out this aspect while sending a copy of the question paper of the last Examination.

(b) In B. Sc. Paper I question No. 8 was wrongly set as it concerns the portion prescribed for Paper II and this question was also made compulsory. The examiner perhaps did not see the syllabus carefully.

6. The Board considered letters Nos. 1199 and 1794 dated the 8th and 28th February 1958 respectively from the Principal, Jaswant College, Jodhpur and letter No. nil dated the 28th February 1958 from Dr. K. M. Gupta, Head of the Botany Department, Jaswant College, Jodhpur in connection with the assignment of marks on the practical note-books—whether they should be awarded by the internal examiner or by the teacher concerned and *resolved to recommend that* the marks on the practical note-books and records should be awarded by the Internal Examiner (appointed by the University) under his signatures. For this purpose the Internal Examiners shall procure in writing, at least a fortnight before the date of the Examination, marks allotted out of 10 to each candidate on practical records by the teachers concerned.

7. As required under O.135, the Board recommended the names of four persons as referees to examine the thesis submitted for the award of the Ph. D. Degree in the subject - "Studies on the Indian Cephalochordate Branchistoma Indicum (Willey)".

8. The Board considered the observation of the Vice-Chancellor that there was a great difference between the marks awarded by the external and internal examiners in theses. Mostly internal examiners award exceptionally high marks to the examinees as compared with the

award of the external examiners and he desired to consider either to abolish thesis or place some check on such glaring divergence of standards.

Resolved to recommend that the thesis at the M. Sc. stage be abolished. In case thesis is kept for M. Sc. Examination it should be examined by two Examiners who shall not be teachers of any Institution affiliated to the University of Rajasthan.

Shiva Rhj Bahadur
Convener.

Appendix I

(Ref. B. O. S. in Zoology Res. No. 1 (a) of May 9 & 10, 1958)

Syllabus for Pre-University Course Examination in Biology

1. The examination in Biology will comprise 'one written paper of 3 hours duration of 100 marks and a practical examination for four hours' duration of 50 marks.
2. The question paper will be divided into two sections 'A' for Zoology and 'B' for Botany. Candidates will be required to attempt five questions in all but not more than three from each section.
3. Lecture work of four periods and practical of 6 periods per week should be allotted for the subject.
4. Candidates will be required to obtain at least the minimum pass marks in the theory and practical separately.

Syllabus in Zoology :

1. Living and non-living; animals and plants; origin of life.
2. Principles of classification, binomial nomenclature.
3. General survey of the animal kingdom including the main characters of the following phyla and classes with a study of the external features and mode of life of the types given below :—
 - (a) Phylum Protozoa : Ex. *Ameoba*, *Paramoecium*, *Euglena* and *Plasmodium* (malaria parasite).
 - (b) Phylum Porifera : Ex. Sponges.
 - (c) Phylum Coelenterata : Ex. *Hydra*, Jelly fishes and corals.
 - (d) Phylum Platyhelminthes : Ex. *Fasciola hepatica* (Tape worm)
 - (e) Phylum Nematelminthes : Ex. *Ascaris* (Round worm)
 - (f) Phylum Echinodermata : Ex. Star fish and sea urchin.
 - (g) Phylum Annelida : Ex. Neries (Marine worm)
Pheretima (Earth worm) and Loeon.
 - (h) Phylum Arthropoda : Ex. Prawn and Crab, Insects (cockroach, grasshopper, butterfly, house-fly, mosquito, honey-bee waps and silk worm), life history of housefly, mosquito and butterfly. Differences between

Culex and *Anopheles* mosquito;
Palamnaeus or *Buthus* (scorpions), Spiders.

- (i) Phylum Mollusca : Ex. *Unio* (Fresh water mussel), Pearl oyster and *Pila* (pond snail).
- (J) Phylum Chordata :
- (i) Class Pisces : Ex. A common fresh-water fish.
- (ii) Class Amphibia : Ex. *Rana* (frog) and *Bufo* (Toad).
- (iii) Class Reptilia : Ex. wall lizard, snake tortoise and crocodile.
- (iv) Class Aves : Ex. Common birds.
- (v) Class Mammalia : Ex. *Lepus* (Rabbit and hare), rat, dog, cat, lion, tiger, cow, horse, camel, elephant, bat whale etc.

Note : The entire subject of general survey is to be treated in an elementary manner. Details of structure and life-history are not required except wherever indicated.

4. The anatomy and physiology of the various organs and organ systems of *Rana*. Development of frog up to the formation of three germ layers and their fate; metamorphosis of frog and its significance treated in an elementary manner.
5. Cell and Cell division.
6. Histology : Epithelial tissue, connective tissue, muscular tissue, cartilage, bone and blood of frog.
 Structure of stomach, intestine, liver, pancreas, kidney, ovary, testis, skin and spinal cord of frog as seen in transverse sections.
7. An elementary knowledge of organic evolution and its evidences.

Practical Work :

1. Identification and classification of the animals included in the syllabus for the written examination.
2. Frog : A study of the skeletal system. Dissection of hyoid apparatus, digestive system, vascular system, urinogenital system and nervous system (spinal and sympathetic nerves only).
3. Microscopical study of the tissues and organs included in the syllabus for written examination from prepared slides.

4. Glycerine preparations of squamose epithelium, striped muscle, hyaline cartilage and blood of frog (single stain to be used where necessary).

Candidates will be required to submit their laboratory notebooks containing a complete record of the laboratory work duly initialled by the teachers concerned.

Text-books suggested :

1. Parker and Bhatia : Elementary Course of Practical Zoology (Macmillan).
2. Holmes : Biology of the Frog (Macmillan).
3. Marshall and Hurst : Practical Zoology (Murray).
4. D. Bhatia & P. L. Anand : New Intermediate Zoology (Atma Ram & Sons, Delhi).
5. Huxley : Elementary Physiology (Macmillan).
6. Bahl, K. N. : Indian Zoological Memoirs, I-Pheretima (Methodist Publishing House, Lucknow).
7. Lawson, J. M. and Sahni, B. : Text Book of Botany (University Tutorial Press).
8. Brimble, L. J. F. : Intermediate Botany (Macmillan & Co.).
9. Scott, D. H. : Structural Botany, Vol. I & Vol. II.
10. Priestley & Scott : Text Book of Botany.
11. Vidyarthi, R. D. : Text Book of Zoology (The Indian Press Ltd., Allahabad).

Books suggested for general reading :

1. Johnson's Microscopic Objects. How to mount them (Longmans).
2. Healthy Living by A. Brown (Longmans).
3. Food, Health, Vitamins by Plimmer (Longmans).
4. Plant Form & Functions by Fritsch & Salisbury.
5. Introductory Biology by Sir Richard Gregory and L. F. J. Brimble (Macmillan & Co., Ltd.).
6. Short Studies in Botany by Ganguly.
7. Introduction to the study of Evolution and Genetics by Shanti Sarup (The Students' Book Co., Jaipur & Jodhpur).
8. Intermediate Botany (Families of Flowering Plants) by Shanti Sarup (The Students' Book Co., Jaipur & Jodhpur).

Appendix-II

(Ref B. O S. in Zoology Res. No. 1 (b) of May. 9 & 10, 1958)

Syllabus for the 1st Year of the 3 Year Degree Course for the Examination of 1959 and 1960.

1. The Examination in Zoology for the 1st Year of the 3 Year Degree Course shall comprise of *one* paper of 100 marks of 3 hours duration and a Practical Test of 50 marks of 4 hours duration.
2. For passing the examination the candidates will be required to obtain at least the minimum pass marks in Theory and Practical separately.
3. The teaching should provide 4 periods for lecture and 6 periods for practical per week.

Syllabus :

Structure, habits and development of animal types as illustrated by the following:

- Protozoa : *Amoeba*, *Plasmodium*, *Euglena* and *Paramecium*. Protozoa and disease.
- Coelenterata : *Hydra* and *Obelia*. Physiological division of labour, polymorphism.
- Platyhelminthes : Structure and life-history of *Taenia*.
- Annelida : Structure and bionomics of *Pheretima posthuma*.
- Arthropoda : Structure and life-history of *Periplaneta*. Elementary knowledge and the life-history and mouthparts of *Anopheles*, *Culex*, *Musca* and butterfly. Differences between Culicine and Anopheline mosquito. Insects and disease.
- Amphibia : Anatomy and physiology of the various organ-system of *Rana*. Development of frog up to the formation of the three germinal layers and their fate and an account of the changes during metamorphosis with special reference to the circulatory and respiratory systems.
- Mammalia : The anatomy and physiology of the various organ systems of *Lepus*. Skull of Dog.

Practical Work

Students are expected to keep a record of all practical work duly initialled by the teachers concerned and submit at the time of practical examination. The microscopical study of *Amoeba* & *Hydra*.

Dissection of earthworm and cockroach; life-history of mosquito and house-fly, microscopical study of the chief animal tissues from fresh or prepared preparations of muscle, cartilage, bone, blood and connective tissue; the microscopical study of earth-worm (fresh preparations and transverse sections); a microscopical examination of the kidney, liver, lung, pancreas, spinal cord, stomach, ovary, testis, intestine and skin of the frog, development of frog.

Osteology of frog and rabbit, substituting the skull of dog for that of rabbit and the dissection of the alimentary, vascular and reproductive systems of frog. Animal classification in outline.

Text Books suggested :

1. Parker and Bhatia : Elementary Course of Practical Zoology (Macmillan).
2. Holmes : Biology of the Frog (Macmillan).
3. Marshall and Hurst : Practical Zoology (Murray).
4. D. Bhatia & P. L. Anand : New Intermediate Zoology. (Atma Ram & Sons, Delhi).
5. Huxley : Elementary Physiology (Macmillan).
6. Bahl, K. N. : Indian Zoological Memoirs, I-Pheretima (Methodist Publishing House, Lucknow).
7. Lawson, J. M. and Sahni, B. : Text Book of Botany (University Tutorial Press).
8. Brimble, L. J. F. : Intermediate Botany (Macmillan & Co.)
9. Scott, D. H. : Structural Botany, Vols. I & II
10. Priestley & Scott : Text Book of Botany.
11. Vidyarthi, R. D. : Text Book of Zoology (The Indian Press Ltd. Allahabad).

Appendix III

(*Reg. B. O. S. in Zoology Res. No. 1 (c) of May 9 & 10, 1958*)

Syllabii for the Second Year and Final Year of the Three-Year Degree Course for the Examination of 1961-62.

Scheme :

1. The Examination in Zoology for the Final Year shall comprise two papers each of 100 marks and of 3 hours duration and a Practical Test of 100 marks of 6 hours duration spread over two days. The examination in Final Year (in III Year) will include the entire course of II Year and III Year, both in theory and practical.

2. For passing the examination the candidates will be required to obtain at least the minimum pass marks in Theory and Practical separately.

3. The teaching should provide 4 periods for lecture and 6 periods for practical per week.

Syllabus for the Second Year of the 3 Year Degree Course

This course will be examined in Paper I (Non-choradata) of final examination and the course will be taught in the 2nd year of the three year degree course.

II Year

Structure, habits and development of animal types as illustrated by the following ;

1. Protozoa : *Trypanosoma*, *Vorticella* and *Monocystis*.
2. Porifera : *Sycon*.
3. Coelenterata : *Aurelia*.
4. Platyhelminthes : *Planaria* (Structure and habits only)
Fasciola hepatica.
5. Nematelminthes : *Ascaris*; medical important of Nematodes.
6. Annelida : *Nereis* and *Hirudinaria*.
7. Echinodermate : *Asterias* (external features only); bipinnaria larva.
8. Arthropoda : *Palaemon* and *Palamnaeus* (or any other scorpion).
9. Mollusca : Fresh-water mussel and *Pila*.

10. Evidences and theories and organic evolution. Recapitulation hypothesis; variation; mimicry; Mendels laws of inheritance, Principles of Genetics.
11. Structure of an animal cell. Mitosis and Meiosis. Gameto genesis and parthenogenesis.
12. A general survey of the animal kingdom with characters of the principal phyla and classes concerning the syllabus prescribed.

Practical Work

The practical work in each year shall be based on the syllabus prescribed in theory for the year concerned.

The candidates will be required to show a knowledge of the following :—

1. A general classification of the different Non-chordata phyla of the animal kingdom with typical examples.
2. Dissections of *Pheretima*, *Hirudinaria*, *Palaemon*, *Periplaneta*, *Palamnaeus*, *Unio* or *Lamellidens*, *Pila*.
3. Simple microscopic technique inclding balsam mounts of *Monocystis*, *Hydra* and *Obelia*, tentaculocyst of *Aurelia*; parapodia of *Nereis* and *Heteronereis*, setae, nephridia, ovary and nerve collar of *Pheretima*; statocyst of *Palaemon* (or any other prawn) book-lung of *Palamnaeus* (or any other scorpion); mouth-parts, ovaries, and salivary glands of *Periplaneta*; spicules of *Sycon*.
4. Study of the prescribed types by means of whole mounts or sections, wherever possible.
5. Candidates will also be required to submit their note-books containing a complete record of their laboratory work actually done by them and initialled by the teachers concerned.

Appendix IV

(Ref. B. O. S. in Zoology Res. No. 1 (d) of May 9 & 10, 1958)

Syllabus for the Final Year of the Three Year Degree Course.

This course will be examined in Paper II (Chordata) of final examination and the course will be taught in the 3rd year of the Three Year Degree Course.

III Year.

Structure, habits and development of animal types as illustrated by the following :

1. Hemichordata : *Balanoglossus* : Tornaria larva.
2. Urochordata : *Herdmania* : Oikopleura larva and retro-grade metamorphosis.
3. Cephalochordata : *Branchiostoma* (*Amphioxus*).
4. Cyclostomata : *Petromyzon* : Ammocoetes larva and *Myxine* external features only).
5. Pisces : *Scaliodon*.
6. Amphibia : External characters of *Salamandra*, *Siren*, *Amblyostoma* and *Gymnophiona*. Axoloti larva and neotony.
7. Reptiles : *Uromastix*; skeleton of *Varanus* to be substituted.
8. Aves : *Columba livia*; skeleton of *Gallus* to be substituted.
9. Macmualia : External characters, affinities and distribution of Prototheria and Metatheria.
10. Outlines of the development of *Branchiostoma*. (*Amphioxus*), *Rana*. *Gallus* (upto four sonite stage). Amnion, allantois and placentation.
11. Comparative account of girdles and the integumentary, vascular, respiratory and urinogenital systems in the vertebrate series.
12. Elementary principles of geographical distribution.
13. Elementary knowledge of general distribution.
14. A general survey of the animal kingdom with characters of the principal phyla and classes concerning the syllabus prescribed.

Practical work

The practical work in this year shall be based on the syllabus prescribed in theory for the year concerned.

The candidates will be required to show a knowledge of the following :

1. A general classification of chordata with typical examples.
2. Dissections of *Scoliodon*, *Rana*, *Uromastix*, *Columba* and *Lepus* (in the case of last three any other lizard, bird and mammal respectively may be substituted).
3. Simple microscopic technique including balsam mounts Placoid scales of *Scoliodon*; blood films of frog and mammal.
4. Histological study of the various organs of the vertebrates.
5. *Osteology* of *Scoliodon*, *Rana*, *Varanus*, *Gallus* and *Lepus*, and skull of dog.
6. Candidates will also be required to submit their note-books containing a complete record of their laboratory work actually done by them and initialled by the teachers concerned.

Books recommended : (For II and III Year of the 3 Year Degree Course).

Parker and Haswell : *Text Book of Zoology*, Vols. I & II (Macmillan).

Walter and Sayles : *Biology of the Vertebrates*.

Grove and Newell : *Animal Biology*.

Dendy : *Outlines of Evolutionary Biology*.

Marshall and Hurst : *Practical Zoology* (John Murray).

Shull : *Evolution*.

Shull : *Heredity*.

Thomson : *Outlines of Zoology* (New Edition).

Newman : *General Zoology* (Macmillan).

Kingsley : *Comparative Anatomy of Vertebrates*.

K. N. Bahl : *Pheretima*.

Romer : *Vertebrate Body*.

Z. Young : *The Life of Vertebrates*.

Bhatia : *Hirudinaria*.

Patwardhan : *Palaemon*.

Baini Prasad : *Pila*.

Borradale and Potts : *Invertebrata*.

S. M. Dass : *Herdmania*.

Br. Mus. Nat. Hist. Economic Series No. 5 : *The Bed Bug*
(Director Natural History Museum, Crowell Rd., London 7).

Hegner : College Zoology.

Hyman : The Invertebrata.

Thillayampalam : Scoliodon.

Newman : Chordata.

Storer : General Zoology.

de Beer : Vertebrate Zoology.

Romer : Introduction to Vertebrate Anatomy.

Whitefield : Introduction to Comparative Zoology.

Neal and Rand : Comparative Anatomy.

Shumway : Introduction to Vertebrate Embryology.

Newman : Evolution, Genetics and Eugenics.

Reese : Outlines of Economic Zoology.

M. D. Shrivastava : Introduction to the Comparative Anatomy of
Vertebrates.

Appendix V

(Ref. B. O. S. in Zoology Res. No. 1 (e) of May 9 & 10, 1958)

Syllabus for Biology of Three Year Degree Course.

(To be covered in the first year only)

1. The examination will comprise one paper of 100 marks of 3 hours duration and one practical test of 50 marks of 4 hours duration.
2. The question paper will be divided into two sections viz., A—(for Zoology) and B (for Botany). Not more than 3 questions should be attempted from each section.
3. The teaching work should provide four periods for lecture and 6 periods for practical per week.
4. For passing, the candidates will be required at least to obtain the minimum pass marks in theory and practical separately.

Syllabus in Zoology :

1. Living and non-living; animals and plants; origin of life.
2. Principles of classification, binomial nomenclature.
3. General survey of the animal kingdom including the main characters of the following phyla and classes :
 - a) Phylum Protozoa : Ex. *Amoeba* and *Plasmodium* (malaria parasite).
 - b) Phylum Coelenterata : Ex. *Hydra*.
 - c) Phylum Platyhelminthes : Ex. *Fasciola Hepatica* (Liver fluke).
 - b) Phylum Annelida : Ex. *Pheretima* (Earth worm) and Leech.
 - e) Phylum Arthropoda : Ex. Prawn, Insects (cockroach, grass-hopper, butter-fly, house-fly, mosquito, life history of housefly, mosquito). Difference between *Culex* and *Anopheles* mosquito; *Palamnaeus* or *Buthus* (scorpions), Spiders.
 - f) Phylum Mollusca : Ex. *Unio* (Fresh water mussel), and *Pila* (Pond snail).
 - g) Phylum Chordata :
 - i) Class Pisces : Ex. A common fresh-water fish.

- ii) Class Amphibia : Ex. *Rana* (frog) and *Bufo* (Toad).
- iii) Class Reptilia : Ex. Wall lizard.
- iv) Class Aves : Ex. Common birds.
- v) Class Mammalia : Ex. *Lepus* (Rabbit and hare), rat, dog, cat, Lion, tiger, cow, horse, camel, elephant, bat, whale etc.

Note : The entire subject of general survey is to be treated in an elementary manner. Details of structure and life history are not required except wherever indicated.

- 4. The anatomy and physiology of the various organs and organ systems of *Rana*. Development of frog upto the formation of three germ layers and their fate; metamorphosis of frog and its significance, treated in an elementary manner.
- 5. Cell and cell division.
- 6. Histology; Epithelial tissue, connective tissue, muscular tissue, cartilage, bone and blood of frog.
Structure of stomach, intestine, liver, pancreas, kidney, ovary, testis, skin and spinal cord of frog as seen in transverse sections.
- 7. An elementary knowledge of organic evolution and its evidences.

PRACTICAL WORK.

- 1. Identification and classification of the animals included in the syllabus for the written examination.
- 2. Frog : A study of the skeletal system. Dissection of hyoid apparatus, digestive system, vascular system, urinogenital system and nervous system (spinal and sympathetic nerves only).
- 3. Microscopical study of the tissues and organs included in the syllabus for written examination from prepared slides.
- 4. Glycerine preparations of squamous epithelium, striped muscle, hyaline cartilage and blood of frog (single stain to be used where necessary).

Candidates will be required to submit their laboratory note books containing a complete record of the laboratory work duly initialled by the teachers concerned.

Text-Books suggested :

1. Parker and Bhatia : Elementary Course of Practical Zoology (Macmillan).
2. Holmes : Biology of the Frog (Macmillan).
3. Marshall and Hurst : Practical Zoology (Murray).
4. D. Bhatia and P. L. Anand : New Intermediate Zoology. (Atma Ram & Sons, Delhi).
5. Huxley : Elementary Physiology (Macmillan).
6. Bahl. K. N. : Indian Zoological Memoirs, I-Pheretima (Methodist Publishing House, Lucknow).
7. Lawson, J. M. and Sahni, B. : Text Book of Botany (University Tutorial Press).
8. Brimble, L. J. F. : Intermediate Botany (Macmillan & Co.).
9. Scott, D. H. : Structural Botany, Vols. I & II.
10. Priestley & Scott : Text-Book of Botany.
11. Vidyarthi, R. D. : Text Book of Zoology (The Indian Press Ltd., Allahabad).

APPENDIX E

(Ref. Fac. of Sc. Res. No. 20 of Nov. 6, 1958)

Minutes of a meeting of the Board of Studies in Geography, held on 7th and 8th May 1958, at 12. 30 p. m , at the University Office, Jaipur.

Presents :

1. Dr. S. M. Mehrotra
2. Shri M. L. Solanki
3. Shri L. N. Upadhyaya
4. Shri D. N. Chaturvedi
5. Shri G. N. Mathur

(Convener)

1. The Board recommended courses of study in Geography for the following examinations : (*vide Appendix I*).

(a) Pre-University Course Examination.

(b) 1st Year examination of the three-year degree course , 1959 & 1960.

(c) 2nd year examination to the three-year degree course, 1960 & 1961.

(d) Final year examination of the three-year degree course, 1961 & 1962.

2. (a) *Resolved to recommend that the Courses of Study for the B. A./ B. Sc. examinations of 1961 be the same for the examinations of 1960.*

(b) *Resolved to recommend that the existing courses of study for the M. A. examinations be repeated for the examinations of 1961, except with the modifications given (*vide Appendix II*).*

3. Under Section 34 (4) (iv) of the University Act, the Board elected Shri Laxmi Narayan Upadhyaya, S. D. Government College, Beawar to serve on the Committee for selection of examiners in Geography.

4. The Board revised the panel of examiners for 1958-59.

5. The Board went through the question-papers set for the examinations of 1958 and offered no comments.

6. With reference to the Faculty of Arts Res. No. 7 dated the 19th December 1957, the Board considered the following recommendation of

the Board of Studies in Economics (Res. No. 6 dated September 2, 1957 and offered no comments as the Board is not concerned with it :

“The Board recommend that the University should introduce a course in Research Methods and Techniques in the University Department of Economics, Jaipur, and enable those teachers in Economics in affiliated colleges who have put in at least five years service to spend a year in the department while receiving their full salary.”

7. The Board considered letter No. 6273/58 dated the 25th April, 1958 from the Director of Economics & Statistics, Government of Rajasthan, Jaipur, requesting to incorporate certain publications of the Bureau of Statistics, Rajasthan under the head ‘books recommended’.

Resolved that as the publications were not received by the members of the Board their suitability for different standards could not be decided and recommended.

8. The Board considered letters Nos. 1199 and 1794 dated the 8th & 28th February, 1958, respectively, from the Principal, Jaswant College, Jodhpur and letter No. nil dated the 28th February, 1958 from Dr. K. M. Gupta, Head of the Botany Department, Jaswant College, Jodhpur in connection with the assignment of marks on the practical note-books for the practical examinations.

The Board felt that in Geography the marks on the practical record books should be awarded by the external examiner in consultation with the internal examiner.

G. N. Mathur
Convenier.

Appendix I

(*Ref. B. O. S. in Geography Res. No. 1 of May 7 & 8, 1958*)

Faculty of Arts

Pre-University Course—Geography.

There will be one paper of three hours duration carrying 100 marks, which will include Physical Geography, Economic and Regional Geography and Map-Work.

Physical, Economic and Regional Geography and Map-Work

Section A : Physical Geography—

Lithosphere - The earth as a planet, its movements and their effects. Chief type of rocks and their characteristics. Earth features and its meanings - mountains, plains and plateaus. Weathering and erosion - work of water, wind, ice and waves. Lakes.

Hydrosphere - Movement of ocean waters - waves, tides, and currents.

Atmosphere - Planetary and periodical winds, Temperature and rainfall - their world distribution.

Section B : Economic and Regional Geography—

Major Natural Regions of the World. Importance, growth and world distribution of the following - wheat, rice, cotton, jute, tea, tobacco, sugar-cane and sugar-beet, coal, iron, petroleum and rubber.

Section C : Map Work—

Scales - plane and diagonal.

Projections - Simple conical with one standard and simple conical with two standard parallel, zenithal equal-area, zenithal equi-distant, cylindrical equal-area (all by graphical construction).

Elementary study of contours.

Study of sheet No. 63 K/12 (Mirzapur).

Books recommended :

1. Foundations of Modern Geography (Part I) by Preece Wood.
2. Uttar Madhyamic Bhoogol (Part I & II) by Puroo Lal & Tripathi (Gautum Brothers, Kanpur).
3. Sheet 63 K/12.
4. भौतिक भूगोल—रामेश्वर यादव (रमेश बुक डिपो, जयपुर) ।

5. माध्यमिक भूगोल-शान्तिस्वरूप श्रीवास्तव (इण्डियन प्रेस, इलाहाबाद) ।
6. प्राकृतिक भूगोल-गनेशलाल देपुरा ।
7. प्रारम्भिक प्रयोगात्मक भूगोल-रघुनन्दनसिंह ।

The scheme of examination (in the 3 Year Degree Course) in the subject of Geography will be as follows :

I Year Examination

	Max. Marks F. of Arts	Max. Marks F. of Sc.	Min. Pass Arts	Marks Science	Time
Paper I – Principles of Physical Geography –	100	125	36	45	3 hrs.

II Year Examination

Paper II – Principles of Human & Economic Geography.	100	100	36	36	3 „
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Final Year Examination

Paper III-Asia	75	75	54	54	3 „
Paper IV-India & Political or Urban Geography.	75	75			3 „
Practical & Field Work.	50	75	18	27	
Total Marks	400	450			

1st Year Examination of the Three-Year Degree Course

There will be one paper of three hours duration carrying 100 marks.

Paper I – Principles of Physical Geography

A broad knowledge of the physical geography of the World, including knowledge of elementary geology, sufficient for the correct appreciation of geographical phenomena, origin of earth and origin of major relief forms. Recent theories.

Lithosphere – General classification of the materials of the earth's crust, Rocks. Earthquakes and volcanoes. Various agents of denudation and deposition. Cycles of erosion and its principle interruptions. River systems and drainage basins. Principle types of landscapes. Mountains, plateaus – their origin and classification. Lakes.

Hydrosphere – Forms of sea and ocean beds. Temperature and salinity. Ocean deposits. Movements of ocean water – waves, tides and currents.

Atmosphere – Distribution and periodical variation of the pressure and temperature of the air. Air movements and wind systems. Cyclones and storms. Humidity and precipitation. Climatic types and regions.

Books recommended :

1. Salisbury : *Physiography* (John Murray, London).
2. Dubey : *Physical Basis of Geography* (Kitab Mahal, Allahabad).
3. Finch and Trewartha : *Elements of Geography* (Mc Graw Hill Book Co., New York).
4. *Physical Geography for Indian Students* by Cyril Fox.
5. *Physical Basis of Geography* by Chatterji.

2nd Year Examination of the Three-Year Degree Course

There will be one paper of three hours duration carrying 100 marks.

Paper II—Principles of Human and Economic Geography.

Section A: Principles of Human Geography—

Contents, aims, scope and development of Human Geography. Interpretation of the principles of Human Geography, its relationship with and place among social sciences. Man and his environment.

Growth of population—group-formation, group-relationship, migrations of population.

Human establishments and settlements.

Essential facts of Human Geography as enunciated by Bruhnes. Transportation. Life in Principal Geographical regions.

Section B: Principles of Economic Geography—

Scope and branches of economic geography. Principles of economic geography.

Crops – conditions of growth and world distribution of chief crops. Important minerals and chief sources of power – their exploitation and use, Pastoral industries; truck farming; various types of agriculture. Major industries and their localization. Means of transportation and communication – comparative merits of each. Trade, trade centres and trade-routes. Development of ports and harbours. Population—its growth, density, and distribution in relation to various economic activities.

Books recommended :

1. मानव भूगोल के सिद्धांत by राजेश्वर प्रसाद करण ।
2. मानव भूगोल के सिद्धांत by विश्वनाथ द्विवेदी ।
3. Principles of Human Geography by Huntington and Crueshing.
4. Human Geography by Brunhes.
5. Earth and Man by Davis.
6. Habitat, Economy & Society by D. Ford.
7. आर्थिक और वाणिज्य भूगोल by सी. वी. मैमोरिया ।
8. Economic and Commercial Geography by R. N. Dubey.
9. Economic and Commercial Geography by A. Dass Gupta
10. Commercial Geography by Stamp.

Final Year Examination of the Three Year Degree Course

There will be two papers and a practical and field-work. Each paper will be of three hours duration and carry 75 marks. The practical and field-work will carry 50 marks.

Paper III—Asia

Detailed regional and economic study of the continent of Asia (including U. S. S. R. but excluding India).

Books recommended : See Paper II.

Paper IV—India and Political or Urban Geography.

Section A : A detailed regional and economic study of the Geography of India with special treatment to the Geography of Rajasthan.

Section B : Political or Urban Geography.

Political Geography : Definition and scope of Political Geography. Elements of Political Geography and Geopolitik. Capitals, communications, political boundaries and frontiers. Population factor in International affairs. Political-Geographical study of the S. E. Asia.

Or

Urban Geography : Definition and scope of urban Geography. Growth of towns. Functions and functional zones. Elementary concept of town-planning. City and Region.

Books recommended : for Paper I—

1. Stamp : Asia (Mathuen).

2. Cressey : Asia's Land and People.

3. एशिया : by कुलश्रेष्ठ ।

Books recommended : for Paper II—

1. Economic Geography of India by R. N. Dubey.
2. Economic Geography of India by A. Dass Gupta.
3. भारत का आर्थिक भूगोल by सी. वी. मैमोरिया ।
4. Indian Year Book (Latest).
5. India-1958 (Latest) : Government Publications.
6. Five Year Plan Report.
7. Elements of Political Geography by Valkenburg.
8. Changing Map of Asia by East & Spaile.
9. Urban Geography by Taylor.
10. Culture of Cities by Mumford.
11. City Region & Regionalism by Dickinson.

Practical and Field-Work

Notes :— (i) The Practical paper will be set on the spot by the external examiner and will include actual elementary surveying of a given area (15 marks), drawing of cartographical representations of map projections, scales, contours etc. (this test paper will carry 20 marks) and 15 marks are assigned for the Practical Record work.

(ii) Practical record work should be maintained by every candidate.

*Scales—*Plane and diagonal; comparative scales; scale of slopes.

Principles and graphical construction and uses of the following map-projections—

Simple cylindrical equal-area; Mercators; conical with one standard parallel; conical with two standard parallel; Bonnes, Polyconic, Sinusoidal; Mollweides, International; Zenithal equidistant and zenithal equal area.

Construction and interpretation of weather and climatic maps.

Cartographical and diagrammatic representation of geographical data.

Contours and section drawing.

Study of 1", 1/2", and 1/4" topographical maps of survey of India.

Surveying—Use of chain and tape Plane Table and Prismatic compass.

Books recommended :

1. General Cartography by Raioz, E.
2. Map Projections by Steers.
3. Elements of Practical Geography : Singh and Dutta.
4. Indian Daily Weather Reports.
5. Topographical Sheets (1 inch, $\frac{1}{2}$ inch & $\frac{1}{4}$ inch).

Note : The candidates will be required to pass in written and practicals separately.

Faculty of Science.

(a) Pre-University Course :

Same as in Arts Faculty.

(b) 1st Year Examination of the Three-Year Degree Course :

There will be one paper of three hours duration carrying 125 marks. (Principles of Physical Geography). Syllabus will be same as in the 1st Year examination of the Three Year Degree Course in the Faculty of Arts.

(c) 2nd Year examination of the Three-Year Degree Course :

There will be one paper of three hours duration carrying 100 marks (Principles of Human and Economic Geography).

Syllabus will be same as in the 2nd Year Examination of the Three-Year Degree Course in the Faculty of Arts.

(d) Final Year Examination of the Three-Year Degree Course :

There will be two papers (Paper I—Asia, and Paper II—India and Political or Urban Geography) and a Practical and Field-work. Each paper will be of three hours duration and carry 75 marks.

The practical and field work will carry 75 marks.

Paper I—Asia Paper II—India and Political or Urban Geography	}	Syllabus same as in the Final Year Examination of the Three-Year Degree Course in the Faculty of Arts.
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Practical & Field Work. Syllabus same as in the Final Year Examination of the Three-Year Degree Course in the Faculty of Arts.

Note : The candidates will be required to pass in written and practicals separately.

Appendix II

(Ref. B O. S. in Geography Res. No. 2 (b) of May 7 & 8, 1958)

M. A. Previous 1960.

No change is recommended in the first three papers.

Paper IV will be as follows :

Europe or Three Southern continents.

M. A. Final 1961.

No change in Paper I.

Papers II and III—Any two of the following :—

- (a) Economic and Commercial Geography.
- (b) Political Geography of the Modern World.
- (c) History of Geographical Ideas and Discoveries.
- (d) Geomorphology.
- (e) Climatology and Oceanography.
- (f) Urban Geography.
- (g) Anthro-po-geography.
- (h) Dissertation on any geographical problem approved by the Head of the Post-Graduate Department of any affiliated college.

Add under books recommended under (a) Economic and Commercial Geography—“आर्थिक और वाणिज्य भूगोल” by C. B. Mamoria.

APPENDIX F

(*Ref. Fac. of Sc. Res. Nos. 12 & 20 of Nov. 6, 1958*).

Minutes of a meeting of the Board of Studies in Mathematics, held on the 9th and 10th May 1958 at 12. 30 P. M. and 8 A. M., respectively, at the University Office, Jaipur.

Present :

1. Dr. C. B. Rathie
2. Dr. N. D. Gautam
3. Shri Balak Ram
4. Shri S. R. Mital (*Convener*)

1. The Board recommended courses of study in Mathematics for the following examinations (*vide Appendices*).

- (a) Pre-University Course Examination (*Appendix I*).
- (b) 1st year examination of the three-year degree course,
1959 & 1960 (*Appendix II*).
- (c) 2nd year examination of the three-year degree course,
1960 & 1961 (*Appendix III*).
- (d) Final year examination of the three-year degree course,
1961 & 1962 (*Appendix IV*).

2. (a) *Resolved to recommend that* the courses of study for the B. A. & B.Sc. examinations of 1961 be the same as for the examinations of 1960.

(b) *Resolved to recommend that* the existing courses of study for the M. A. & M. Sc. examinations be repeated for the examinations of 1961, except with the modifications given *vide Appendix V*.

3. Under Section 34 (4) (iv) of the University Act, the Board elected Dr. C. B. Rathie to serve on the committee for selection of examiners in Mathematics.

4. The Board revised the panel of examiners for 1958-59.

5. The Board went through the question papers set for the examinations of 1958 and offered the following comments :—

M. Sc. (P) Paper II. The questions were selected from the last two or three years papers which is not desirable at the Post-graduate level.

6. A panel of four persons, as required under Ordinance 135, for appointment of referees to examine the thesis (submitted for the award of Ph.D. degree) in the subject "Thermal Stresses in Solids" was recommended.

7. As decided in the meeting of the Conveners of the Boards of Studies in Economics, Geography and Mathematic, the Board of Studies in Mathematics recommended that there be one paper at the end of the second year also and two papers at the end of third year at the three-year degree course in Science. The Syllabuses have been framed according to the above recommendation.

8. Owing to the growing importance of Statistics and in view of the absence of any Statistical Institute in Rajasthan, the Board recommended that there be a separate subject of Statistics in the three year degree course of this University as is done in other Universities.

S. R. Mital
Convenor.

Appendix I

(Ref. B. O. S. in Maths, Res. No. 1 (a) of May 9 & 10, 1958)

Mathematics

Pre—University Course

There will be two written papers of three hours each and 75 marks each.

1st Paper :—Algebra and Co-ordinate geometry.

Algebra :—Quadratic equations involving two or more unknown quantities. Theory of quadratic equations and expressions of the second degree. Surds and indices. Imaginary quantities and cube roots of unity. Arithmetical, Geometrical and Harmonical Progressions. Easy problems on Permutations and Combinations. Proof of Binomial Theorem for positive integral index. Theory of logarithms and the use of Binomial theorem for any index and of Logarithmic and exponential Theorems. Simple cases of partial fractions. Evaluation of easy determinants of third order.

Coordinate Geometry :—(Rectangular coordinates only).

Distance between two points. Ratio Formulae, Area of a triangle, Locus, Equations of straight lines in the following forms :—

$$(i) \quad y = mx + c$$

$$(ii) \quad \frac{x}{a} + \frac{y}{b} = 1$$

$$(iii) \quad x \cos L + y \sin L = k$$

$$(iv) \quad y - y_1 = m(x - x_1)$$

$$(v) \quad y - y_1 = \frac{y_2 - y_1}{x_2 - x_1} (x - x_1)$$

$$(vi) \quad \frac{x - x_1}{\cos \theta} = \frac{y - y_1}{\sin \theta} = r$$

Angles between straight lines, length of perpendiculars from given points on given straight lines. Intersection of lines. Bisector of angles between straight lines. General equation of second degree (homogeneous and non homogeneous) representing two straight lines and intersection of any curve with a straight line.

2nd Paper :—Trigonometry and Coordinate Geometry.

Trigonometry :—Sexagesimal and Circular units of angular measurements. Trigonometrical ratio and their relations to one another. Trigonometrical ratios of sum and difference of angles. Transformation of products and sums. Trigonometrical ratios of multiple and sub-multiple angles. General expressions of all angles having the same

trigonometrical ratios. Identities; Solution of simple trigonometrical equations. The relation between the sides and angles of a triangle. Properties of triangles and circles connected with them. Logarithms and their applications. Solution of triangles. Simple problems on heights and distances.

Coordinate Geometry :—Equation of the circles in the following form :—

- (i) Simple equation $x^2 + y^2 = a^2$
- (ii) Central form $(x-h)^2 + (y-k)^2 = a^2$
- (iii) General form $x^2 + y^2 + 2gx + 2fy + c = 0$
- (iv) Diameter form $(x-x_1)(x-x_2) + (y-y_1)(y-y_2) = 0$

Intersection of a circle and a straight line. Tangents and normals. Chord of Contact and Polars. Orthogonal circles and radical axes.

Books recommended :—

1. Pre University Algebra by Pavate (Macmillan & Co.)
2. A New Algebra for Pre-University & Higher classes
by R. C. Gour (Ramesh Book Depot, Jaipur. Rs. 3/8/-).
3. Intermediate Algebra by Butt (S. Chand & Co.).
4. Trigonometry Part I by S. L. Loney (Macmillan).
5. Plane Trigonometry by Patni & M. C. Gupta (Ramesh Book Depot, Jaipur).
6. Coordinate Geometry Part I by Loney (Macmillan).
7. Co-ordinate Geometry by G. C. Patni & R. C. Singhvi
(Ramesh Book Depot.) Rs. 3-12-0.

Appendix II

(Reg. B. O. S. in Maths. Res. No. 1 (b) of May 9 & 10, 1958)

1st Year Examination of the Three Year Degree Course, 1959-60

There will be two papers of 3 hours each. Each question paper shall be divided into two parts and the candidates will be asked to attempt not less than two questions from each section.

Paper I Section A. Coordinate Geometry.

Section B. Calculus.

Paper II Section A. Statics.

Section B. Dynamics.

Paper I (a) Coordinate Geometry : Circles, Parabola and ellipses (Rectangular Coordinates only).

(b) CALCULUS—Differential Coefficient. Geometrical significance dy/dx and its application. Differentiation of a sum, product and quotient. Differentiation of x^n , e^{ax} , \log^ax , function of a function and of simple trigonometrical circular functions, and of inverse functions. Integration of x^n , e^{ax} , \log^ax and of trigonometrical circular and inverse functions. integration of a product by parts and simple cases of integration by substitution. Geometrical interpretation of a definite integral.

Paper II (a) Statics—Co-planar forces, parallel & non-parallel forces and their composition; equilibrium of a body under three forces; moments; conditions of equilibrium of a body under a system of coplanar forces and simple examples; Centre of gravity; Friction; Work and Power; Simple Machines (lever, balance, systems of pulleys, wheel and axle).

(b) Dynamics—Velocity; Composition of Velocities; Relative Velocity; Acceleration; Rectilinear motion under uniform acceleration; composition of accelerations: Newton's Laws of Motion, Rectilinear motion under gravity in a vertical and down an inclined plane; motion of two masses connected by a string passing over a pulley; Projectiles; Direct Impact of Smooth Bodies, definition and calculation of Kinetic Energy.

Note : Calculus may be used.

The following books are *recommended* and not prescribed :—

1. Coordinate Geometry by S. L. Loney (Macmillan).
2. Coordinate Geometry by G. C. Patni and R. C. Singhvi
(Ramesh Book Depot, Jaipur).
3. Calculus by G.C. Patni and R.C. Gour (Ramesh Book Depot,
Jaipur).
4. The Intermediate Calculus by Dr. Brij Mohan.
5. Elements of Statics by S. L. Loney.
6. Elements of Dynamics by S. L. Loney.
7. Elementary Mechanics Pt. I Statics by R. S. Varma.
8. Elementary Mechanics Pt. II Dynamics by P. D. Shukla.

Appendix III

(Ref. B. O. S. in Maths. Res. No. 1 (c) of May 9 & 10, 1958)

2nd Year Examination of the Three Year Degree Course 1960 & 1961.

There will be one paper of three hours duration and of 100 marks. There will be three sections and candidates will be asked to attempt not less than one question from each section—

Section A : Trigonometry—Inverse Trigonometrical Functions, De Moivre's Theorem, Summation of Trigonometrical Series, Hyperbolic Functions, Expansion of Trigonometrical Functions.

Section B : Differential Calculus—Limits, Continuity, Differentiation of a Function of a Single Variable, Successive Differentiation, Rolle's Theorem, First Mean Value Theorem (Lagrange's and Cauchy's Forms), Taylor's and Maclaurin's Theorems, Indeterminate Forms, Maxima and Minima for a Single Variable. Partial Differentiation, Tangents, Normals, Asymptotes, Double Points, Curvature, Envelope and Simple Curve tracing.

Section C : Integral Calculus—Standard Forms. Methods of Substitution, Integration by Parts and Easy Reduction Formulae, Rectification of plan curves, Quadratures, Simpson rules, Surfaces and Volumes of Solids of Revolution, Centre of Gravity.

Books Recommended :

Plane Trigonometry Pt. II by S. L. Loney.

Plane Trigonometry by Pyare Mohan.

Differential Calculus by Gorakh Prasad.

Integral Calculus by Gorakh Prasad.

Differential Calculus by Shanti Narayan.

Integral Calculus for Beginners by J. Edwards.

Appendix IV

(*Ref B.O.S. in Maths. Res. No. 1(d) of May 9 & 10, 1958*)

Final Year Examination of the three Year Degree Course 1961 & 1962.

There will be two papers each of 3 hours duration and each carrying 100 marks. Each paper will be divided into three sections and candidates will be required to attempt at least one question from each section.

Paper I :

- Section A. Coordinate Geometry—Straight line, Circle, Parabola, Ellipse, Hyperbola and the Reduction of the General Equation of the Second Degree to Standard Forms. (The above to be treated by rectangular and polar co-ordinates only).
- Section B. Algebra—Inequalities, Simple Continued Fractions; Elementary Theorems on Convergence and Divergence of Series, Binomial Theorem for any rational index; Exponential and Logarithmic Series; Partial Fractions, Easy Determinants with applications, General properties of equations; relation between roots and coefficients, Easy Symmetric functions of the roots, Algebraic solution of the cubic.
- Section C. Differential Equations—Ordinary differential equations of the first order and first degree; Clairant's form and singular solutions of the equations of the first order; Linear equations with constant coefficients.

Paper II :

- Section A. Statics—Elementary idea of Vectors, Addition and subtraction of Vectors. General conditions of equilibrium of a particle and of a rigid body under the action of forces in one plane. Virtual work. Friction, Centre of Gravity, Common Catenary, Hooke's Law.
- Section B. Dynamics—Velocity and Acceleration, Newton's Laws of Motion, Work and Energy, Rectilinear Motion, Projectiles in vacuum. Circular and Harmonic Motion. Simple and Cycloidal pendulums, Impact.
- Section C. Hydrostatics—Fluid Pressure, Pressure on immersed surfaces. Conditions of Equilibrium of a floating body. Centre of Pressure.

Books recommended :

1. Coordinate Geometry by S. L. Loney (Macmillan).
2. Coordinate Geometry by Smith (Macmillan).
3. Coordinate Geometry by Gorakh Prasad & H. C. Gupta
(Pothishala).
4. Coordinate Geometry by Ramballabh.
5. Statics by R. S. Varma.
6. Statics by A. S. Sinha.
7. Dynamics by P. L. Srivastava.
8. Dynamics by Rawat.
9. Dynamics by M. Ray.
10. Hydrostatics by B. N. Prasad.
11. Hydrostatics by M. Ray.
12. Hydrostatics by Ram Kumar.
13. Algebra by J. C. Chaturvedi.
14. Algebra by M. Ray & H. P. Sharma.
15. Algebra by Hall and Knight.
16. Integral Calculus by Gorak Prasad.
17. Differential Equations by Murray.

Appendix V

(Ref. B.O.S. in Maths. Res. No. 2 (b) of May 9 & 20, 1958)

M. A. & M. Sc. Final Mathematics 1961

(Add after the optional paper X of M.A. & M.Sc Final examination)

XI. Electricity and Magnetism :

Electricity and Magnetism :--Properties of potentials. Lines of force, dielectrics, condensers and conductors, images, application of methods of inversion and spherical Harmonics to electrostatic problems, steady currents in linear conductors.

Permanent and induced magnetism, the magnetic field produced by electric currents, induction of currents in linear circuits.

Book recommended :

Ramsay : Electricity and Magnetism.

XII. Relativity :

Relativity :--Michelson and Morly's experiment, Lorentz transformation, Fitzrald contraction. Hemilton's principle. Mass, Momentum and Energy, Minkoweki's 4—dimensional world, Principle of equivalence, Contravariant and covariant vectors multiplication, contraction and quotient law of tensors, transformation. Fundamental tensors, associated tensors. Christoffel's—3 index symbols, geodesic covariant differentiation, Reimann Christoffel tensor.

Condition for flat space time, Einstien's law of gravitation, field of an isolated particle, Schwarzschild's solution, Planetary orbits.

Books Suggested :

R. C. Tolman : Relativity, Thermodynamics and Cosmology.

Edington : Relativity.

Coff : Relativity.

APPENDIX G

(*Ref. Fac. of Sc. Res. Nos. 8, 10, 11 and 20 of Nov. 6, 1958*)

Minutes of a meeting of the Board of Studies in Geology, held on the 6th and 7th May, 1958 at 12. 30 P.M. and 8.00 A.M., respectively, at the University Office, Jaipur.

Present :

- 1 Shri Mathuresh Behari
2. Shri B. Prasad
3. Shri E. Venkayya
4. Dr. K. P. Rode (*Convener*)

1. The Board recommended courses of study in Geology for the following examinations (*vide Appendix I*).

- (a) Pre-University Course Examination.
- (b) 1st Year examination of the three-year degree course, 1959 & 1960.
- (c) 2nd year examination of the three-year degree course, 1960 & 1961.
- (d) Final year examination of the three-year degree course, 1961 & 1962.

2. The Board recommended that the students who have successfully completed first year University course in B. Sc. Engineering or Medical Courses be eligible for admission to II year B. Sc. course with Geology. They will however be required to pass in the 1st year Geology paper or papers before they are allowed to appear at the Final B. Sc. examination.

3. (a) *Resolved to recommend that the courses of study for the B. Sc. examination of 1961 be the same as for the examination of 1960.*

(b) *Resolved to recommend that the existing courses of study for the M. Sc. (Previous & Final) examinations be repeated for the examinations of 1961, except with modifications in Special Paper VI, as given in Appendix II*

4. Under Section 34 (4) (iv) of the University Act, the Board elected Shri B. Prasad to serve on the Committee for selection of examiners in Geology.

5. The Board added some names in the panel of examiners for 1958—1959.
6. The Board went through the question papers set for the examinations of 1958 and offered no comments.
7. The Board considered letters Nos. 1199 and 1794 dated the 5th and 28th February 1958 respectively from the Principal, Jaswant College, Jodhpur and letter No. nil dated 28th February 1958 from Dr. K. M. Gupta, Head of the Botany Department, Jaswant College, Jodhpur in connection with the assignment of marks on the practical note books for the practical examination.

The Board is of the view that the marks for practical record should primarily be given indepently by the class teacher concerned and the Internal Examiner should accept the marks unless some flagrant discrepancy is observed, in which case he should consult the class teacher and modify the marks accordingly.

8. The Board considered the observation of the Vice-Chancellor to the effect that there was a great difference between the marks awarded by the external and internal examiners in thesis. Mostly internal examiners, who are supervisors of the candidates, award exceptionally high marks as compared with the award of the external examiners and therefore desired to consider either to abolish thesis altogether or place some check on such glaring divergence of standards, and suggested the following alternatives to get over the situation :

- (1) In case of wide divergence of markings the thesis be referred to third examiner.
- (2) The thesis may not be given regular marks but should be judged on the basis of the standard reached in the following categories :

Extra first class	—	80 percent marks.
First Class	—	65 percent marks.
Second Class	—	50 percent marks.
Third Class	—	38 percent marks.

And the final division should reflect this valuation either jointly or separately.

K. P. Rode
Convener.

Appendix I

(Ref. B. O. S. in Geology Res. No. 1 of May 6 & 7, 1958)

Pre—University Course :—

Since Geology does not form Part of the High School Courses and since it is desired that the Geological courses be started from the I year of the three year degree courses, the Board does not feel the necessity to make any of the 3 Syllabus in Geology at the Pre—University courses.

1st Year Examination

(Three Year Degree Course) Geology

Scheme

	Max. Marks.	Minimum Pass Marks.	Time.
One Paper : (a) General Geology, Structural Geology. (b) Crystallography, Mineralogy	100	36	3 hours
Practical :—Study of Minerals including Ores in hand specimens, Crystals, Crystal drawings, Geological maps.	50	18	4 hours

Final Year Examination

(Three Year Degree Course) Geology

Scheme

Paper I (a) Palaeontology (b) Petrology	100	72	3 hours
Paper II (a) Stratigraphy (b) Economic Geology with special reference to mineral wealth of Rajasthan.	100		3 hours
(c) Applied Geology			
Practical :—Fossils; optical Mineralogy and Petrology; Blow Pipe, Determination of Mn, Fe, Pb and Zn % in Mn Fe Pb ores, Determination of Cao in L. S. Surveying. Palaeo- geographical Maps. Zone Fossils.	100	36	6 hours

Syllabus

First Year :

General Geology :

Scope and sub-divisions of Geology and their relation with other fundamental sciences.

Elementary ideas of the origin, interior and age of the earth. Nature of the earth's crust and its movements. Origin and distribution of continents, Oceans and mountain ranges. Processes and agents of erosion, denudation, transportation and deposition. Basins of Deposition.

Vulcanicity and earthquakes; their causes and manifestations; their geographical distribution.

Physiographic Features of India.

Structural Geology :

Stratification and formation of sedimentary beds.

Dip and strike, joints; Folds and Faults, their classification and their effect on the outcrop.

Outliers, inliers, unconformity, overlap and their significance. Forms and modes of occurrence of eruptive rocks.

Crystallography and Mineralogy :

Laws of Crystallography.

Elements of Crystal Symmetry.

Coordinate systems in Crystallography.

Miller and Weiss systems of notations.

Crystal forms, Zones.

Classification of crystal systems. Study of the following crystal classes :

Cubic System, Holohedral class, pyritohedral class, Tetrahedral class.

Tetragonal System : Holohedral class.

Hexagonal System : Holohedral; Hexagonal, Trapezohedral.

Rhombohedral class, Rhombhedral hemimorphic.

Trigonal hemimorphic, Trigonal Trapezohedral class.

Orthorhombic System : Holohedral class.

Monoclinic System. Holohedral class.

Triclinic.

Laws of Twinning, Use of contact goniometer and one circle goniometer.

Mineralogy :

Important chemical and physical characters of minerals.

Elementary concepts of isomorphism and polymorphism.

Elements of internal structure of crystals.

Elements of optical mineralogy.

Extinction angle, pleochroism, birefringence, uniaxial and biaxial nature of minerals. A study of important rock forming and economic minerals

Practicals :

Structural Geology : Reading and interpretation of simple Geological maps; involving simple folding, faulting, unconformity and intrusions, completion of outcrops.

Crystallography : Crystal drawing. Identification and description of Crystal forms belonging to various Crystal classes studied.

Clinographic projections of simple forms of Cubic system.

Mineralogy : Determination of specific gravity.

With the help of Steel Yard Balance, Spring balance, specific gravity bottle. Identification of important minerals and Ores in the hand specimens.

Books Recommended :**Theory :**

General Geology : Text books (i) An Introduction to Geology. Vol. I. by W. B. Sco

(ii) Physical Geology by A. Holmes.

Reference Books : (i) Outlines of Physical Geology by Longwell Knopf & Flint.

Structural Geology : Text : Geological Maps by G.W. Chiplonkar.

Reference Books : (i) Structural and Field Geology by James Giekie.

(ii) Structural Geology by M. P. Billings.

Crystallography : } Text : Rutleys Elements of Mineralogy

Mineralogy : } by H. H. Read.

Reference Book :

Danas Text Book of Mineralogy by W. E. Ford.

Practicals :

Structural Geology : (i) Geological Maps by G. W. Chiplonkar.

(ii) Platt Series.

(iii) Agashe Series.

Syllabus (Final Year Examination) to be covered in the 2nd & the 3rd Years.

Paper I

Theory :

Paleontology :

Fossils-their modes of preservation, and their value as indicators of age and palaeogeography and Evolution

Morphology and geological distribution of the following groups of fossils.

Actinozoa, Graptolitoidea, crinoidea, Echinoidea.

Brachiopoda, Lamellibrachiat, Gastropoda, Cephalopoda, Trilobita.

An elementary knowledge of the important Gondwana plant fossils.

Petrology :

(1) Igneous (2) Sedimentary (3) Metamorphic rocks. Elementary knowledge of the constitution and composition of magmas. Crystallisation of unicomponent and bicomponent silicate melts.

Crystallisation of common basaltic magma. Structures and textures, classification and origin of Igneous rocks. Petrographic provinces, Forms of Igneous rocks.

Sedimentation, diagenesis, and classification of Sedimentary rocks.

Metamorphism : Agents and processes, Kinds of metamorphism and their products. Classification of metamorphic rocks into grades, Zones and facies, structures and textures of metamorphic rock.

Injection metamorphism, Retrograde metamorphism.

Practicals:

- (a) Drawing, description and identification of important invertebrate fossils and typical Gondwana Plant fossils.
- (b) Identification of important rock forming minerals under the microscope, in plane polarised light.

Identification of important igneous, sedimentary and metamorphic rocks in hand specimens and under the microscope.

*Books recommended :***Theory :***Palaeontology* : Text—Palaeontology Invertebrate by H. Woods.

Reference Book:—Introduction to Palaeontology by A. M. Davies.

Petrology : Text—The Principles of Petrology by G. W. Tyrrell.*Practicals* : Text—Minerals and Microscope—H. G. Smith. Mineralogy
Petrology Economic Geology in tables by N. L. Sharma.*Reference Books :*

- (i) Petrology for Students by A. Hawker.
- (ii) Microscopic Petrography by E. W. Heinrich.
- (iii) Petrography in Thin Sections by Wilhim, Turner and Gilbert.

Paper II**Theory :***Stratigraphy* : Principles of Stratigraphy and stratigraphic correlations. Chronological subdivisions of Geological Record. Structural Units of the Indian Subcontinent.

Rock formations of India, Pakistan and Burma, Stratigraphy of the Indian Subcontinent:—

Rock formations—their classification, lithology, fossil contents and correlations, Mineral association.

Palaeogeography of India during Permian-Carboniferous and Cretaceous Periods.

Economic Geology : Modes of Origin, Occurrence, Association, Classification and uses of Economic minerals, Secondary enrichment. Important mineral deposits of India with special reference to those of Rajasthan. General Principles of prospecting, development and mine valuation.*Practicals :**Stratigraphy* : Study of important lithological and fossil bearing types of Indian rock formations.*Economic Geology* : Identification of minerals by Blow pipe tests.

Estimation of Mn, Fe, Pb, and Cu content in their respective ores and CaO in limestone.

Surveying by:—Chain, Plane Table and Prismatic Compass.

Book recommended :

Stratigraphy : Text—(a) Geology of India by D. N. Wadia.

Reference Book :

- (i) Geology of India by M. S. Krishnan.

Economic Geology : Text—(i) An introduction to the Study of Ore Deposits by F. H. Hatch.

Reference Books :

1. Formation of ore deposits by A. M. Bateman.
2. Reports of the Mines-Department of Government of Rajasthan.
3. Quinquennial Review of Mineral Production
(Record G. S. I. Vol. 70).
4. Field Geology by Laher.

Appendix II

(Ref B. O. S. in Geology Res. No. 3 (b) of May 6 & 7, 1958)

M. Sc. Geology

Paper VI. Special Paper.

Applied Geology.

Mining Geology :—Drilling and Blasting.

Mining Methods :—Surface mining and quarrying, Outlines of underground mining. Ore Dressing and Benefeciation, Sampling and valuation of Mines. Mine examination and writing reports. An acquaintance with current Mining Laws. Care of Explosives. Engineering Geology.

Construction of Dams, Tunnels and Earthquake proof buildings. Building materials and their suitability. Geology of water supply.

Practicals—Regular Practical training in Mines for about 3 weeks. Detailed study of surveying methods including underground surveying.

The Board recommends that the present distribution of marks in M. Sc. Practical Examination in Geology be modified in the following way :

	In place of the existing	
M. Sc. Previous	135	160
M. Sc. Final		
including practical special paper.	185	160
Records of Lab. and field.	80	80

N. B. :—It is not necessary to pass separately in the Practical of the Special paper.

APPENDIX H

(Ref. Fac. of Sc. Res. No. 20 of Nov. 6, 1958)

Minutes of a meeting of the Committee of Courses in Home Science held on 6th and 7th May, 1958, at 12.30 p. m. and 1 p m. respectively, at the University Office, Jaipur.

Present :

1. Mrs. S. Rastogi
2. Mrs. S. Sirin
3. Miss P. B. Menon
(Convener)

1. The Committee recommended courses of study in Home Science for the following examinations (*vide Appendices*) :

- (a) Pre-University Course Examination (*vide Appendix I*).
- (b) 1st year examination of the three-year degree course, 1959 & 1960. (*vide Appendix II*).
- (c) 2nd year examination of the three-year degree course, 1960 & 1961. (*vide Appendix III*).
- (d) Final year examination of the three-year degree course, 1961 & 1962. (*vide Appendix IV*).

2. Resolved to recommend that the Courses of study for the B A. B Sc. examinations of 1961 be the same as for the examination of 1960, except with the modifications given (*vide Appendix V*.)

3. The Committee revised the panel of examiners for 1958-1959.

4. The Committee went through the question-papers set for the examinations of 1958 and offered no comments.

5. Resolved that, as there are no practicals in the B.Sc. and B.A. classes for Home Science, the existing course be continued with the suggestion already made, and omitting the practical part and consequently the matter of equipments for the kitchen etc.

P. B. Menon,
Convener.

Appendix II

*(Ref. Committee of Courses in Home Sc. Res. No. 1(a)
of May. 6 & 7, 1958)*

Home Science (3 years course)

The subject for convenience, is divided into four sections :

- A. Philosophy, Hygiene, Bacteriology and First-aid and Home-Nursing.
- B. Food and nutrition.
- C. Mother Craft and Child development.
- D. Home Management and House Craft.

Examination Scheme :

- (1) At the end of the first year there will be one theory paper of three hours duration carrying 100 marks.
- (2) At the end of the second year, there will be one theory paper of 3 hours duration carrying 60 marks and a practical test of 40 marks; of this 40 marks, 10 marks will be reserved for the session at work in the class, the records, files materials done in the needle work class under clothing have to be produced. The practical will be only in First-aid, Home nursing, mother craft and needle work and tailoring (6 hours duration). It is essential to secure minimum pass marks in the theory and practicals separately, for passing the examination.
- (3) At the end of the final third year, there will be two theory papers covering the whole of the portions studied in all the 3 years; each paper will be of three hours duration carrying 75 marks each. There will be practical examination (6 hours duration carrying 50 marks. (10 marks reserved for sessional work). This practical will include only nutrition and cookery, home-management and laundry. Candidates should secure minimum pass marks in the practical test and in the aggregate of the two theory papers.

Theory Paper—I will be on Section A & B.

Theory Paper—II will be on Section C & D.

Syllabus for the Pre-University Course in Home-Science:

There will be only one paper of 100 marks and 3 hours duration, divided into three sections viz. (1) Physiology, Hygiene & First-aid, (2) Mother Craft and Child Development and (3) House-hold management and nutrition.

Section I. Physiology, Hygiene and First-aid :*Physiology :*

1. A general study of the structure of the human body. The cell—the elementary tissues—the organs and the system of the body.
2. The skeleton—an outline study of the bones of the skeleton (technical names of only the main bones of the body to be learnt).
3. The Joints and muscles—Varieties of joints with common example. Examples in the body. Structure of moveable joints; ligaments and tenders. Varieties of muscles and their actions.
4. The blood—Composition, function, Clotting of blood.
5. Circulatory system :
 - (1) Heart—its structure.
 - (2) The blood vessels—arteries, and capillaries.
 - (3) The course of circulation through the body and its purpose, blood pressure and pulse.
 - (4) The lymphatic system—Tissue, fluid, lymph, lymphatic vessels and glands spleen—structure and function.
6. The Respiratory system—Organs of respiration—The purpose and mechanism of breathing. Composition of inspired and expired air.
7. The digestive system—(Food needs of the body and classes of food stuffs will be studied under nutrition). The organs and process of digestion—absorption and assimilation of food.
8. The excretory system :
 - (1) The organs of excretion.
 - (2) The urinary system—Kidneys, ureter, bladder, their structure and function. Mechanism of urine formation, composition of urine.
 - (3) The skin—Structure and function, regulation of body temperature.
9. The nervous system :
 - (1) The Central nervous system—brain and the spinal cord.
 - (2) The peripheral nervous system. The nerves.

- (3) Automatic nervous system—sympathetic and para sympathetic.
 - (4) The sense and sense organ—eye—structure and function, defects of vision, care. Ear, nose and tongue—structure and function and care skin as a sensory organ.
10. The endocrine system. Elementary knowledge of the function of Pituitary, adrenals, thyroid, para-thyroid, thymus, gonads and pancreas.

Hygiene :

1. Air and Ventilation. Composition of air, impurities in air and their effects on health.

Meaning of ventilation, effects of defective ventilation and over-crowding. Ventilation of homes and public buildings. with special reference to India.

2. Water and its supply—Composition of water, sources of water supply. Impurities in water, their sources and effects on health. Hard and soft water. Methods of purification of water—domestic and on a large scale.

3. Personal Hygiene:

- (1) Cleanliness and care of skin, hair, nails, teeth, eyes, nose and ears.

(2) Breathing habits.

(3) Posture.

(4) Habits with regard to eating, drinking and smoking. Bowel-habits.

(5) Exercise, rest, sleep, recreation.

(6) Clothing.

(7) Social customs affecting health.

4. Infection—(i) Bacteria—Useful and disease producing. Transmission of infection.

(ii) Study of the following infectious diseases, their cause, symptoms, method of transmission, prevention and arrest. Small-pox, chicken-pox and measles.

First-Aid : Treatment in connection with the following—

Burns and Scalds. Cuts and wounds. Haemorrhage. Sprain, fractures and dislocation. Drowning. Heat-stroke. Bites and

stings. Unconsciousness—fainting. Fits and convulsion.
Common poisons and their anti-dotes.

Care of the sick : With special emphasis on the care and isolation of an infectious case at home. Cold, influenza, diphtheria, whooping cough, enteric fever, cholera, dysentery, diarrhoea, poliomyelitis (infantile paralysis), tuberculosis, malaria and Plague. Disinfectants and practical methods of disinfection. Modern movements for the education of society in the laws of health.

Section 2—Mother Craft and Child-Development :

Mother-Craft—

1. Elementary study of the reproductive organ.
2. Physiology of reproduction.
3. Physiology and hygiene of menstruation.
4. Physiology of pregnancy.
5. Care of the pregnant mother with special reference to diet, fresh air, sun-shine, clothing, cleanliness, rest, exercise, mental outlook during this period. Anti-natal clinics.
6. Preparation for the birth of the child in the house. Maternity houses and hospitals.
7. Care of the mother during puer-perium.
8. Post-natal care

Care of the Child :

1. Feeding.
2. Clothing.
3. Formation of healthy habits with regard to eating, sleeping, elimination, exercise, play, etc.
4. Health protection—vaccination and inoculation.
5. Treatment of minor ailments.
6. Modern movements for child and maternal welfare.

Child Development :

1. Heredity and environment of the child. Original nature and its possibilities of modification. Methods of modifying original nature.
2. Conditions of habit formation. Training in good habits and breaking up of bad habits, character formation and training in social adjustments.

3. Feelings and emotions—training of emotion in a child, the motivation; training of the imagination of the child.
4. Intelligence and learning. Nature of intelligence. Sense-training. Concepts formation. Laws of learning. Condition of good memory and training in memory.
5. Hobbies and play activities :
 - (a) Toys and their utility.
 - (b) Organised games.
 - (c) Unorganised games.
 - (d) Stages in the growth of play activities.
6. Backward and pre-cocious children. Their characteristic and their behaviour. Problem children and training them.
7. Modern methods of education :
 - (1) Play-way method.
 - (2) Montessori method.
 - (3) Kinder garten system.

Section 3—House-hold management and Nutrition :

1. Principles of Household management, Health. Domestic-economy and Dietetics.
2. *Home* : Arrangement and decoration. Choice of the house and site, cleanliness of the home, arrangement of the rooms—daily, weekly and seasonal cleaning; disposal of refuse and sewage. Interior decoration; Furniture; Colourschemes; Exterior appearance and decorations, Pre-cautions against house-hold pests.
3. Planning of the House-hold duties :

For wives who stay at home and for those who are employed in service.

Management of servants. Rest, recreation and social contacts. Social service activities. Useful hobbies. Care of the children and the aged; care of domestic animals and pets.

4. Domestic Economy—Wants, necessities and luxuries. Income and expenditure. Family budgets and keeping of accounts. Savings and their proper investments. Marketing and purchase of household supplies. Methods of storage and

preservation of perishable and non-perishable provisions. Knowledge of the facilities offered by post-office, railways and banks.

5. *Family :*

Human needs and conditions that frustrate them. Advantages and disadvantages of joint-family system. Family adjustments and obligations as a daughter, sister, wife, sister-in-law, daughter-in-law and as a mistress of the house-hold.

Obligations to the community as a citizen. Marriage and the many problems connected with it.

6. *Nutrition :*

(i) Food—Its importance.

Physiological classification of food.

Constituents of food—their sources and importance.

Meal—planning according to age, occupation, income-level etc.

(ii) Diets—Balanced-diet. Its importance.

Diets for infants, children, school-going children and for the aged.

Diets during pregnancy and lactation.

Diets for the invalid.

Malnutrition : Causes, signs of detection and dietetic cures.

(iii) Cookery—Effects of cooking. Principles of cooking.

Methods of cooking. Retention of food-value in cooked foods. Importance of raw fruits & vegetables. Place of salads in the menu. Kitchen-hygiene and food-poisoning.

Principles and methods of preservation of foods.

7. *Duties of the Hostress :*

Etiquette and manners. Entertaining guests, hospitality. Decoration, presentation and serving of food.

Appendix II

(Ref. Committee of Courses in Home Sc. Res. No. 1 (b)
of May 6 & 7, 1958)

Home-Science—First Year

Section A. Hygiene Bacteriology, Home-Nursing & First-Aid.

Hygienic principles to be taught in relation to the physiology of the Human body.

1. Hygiene of the Respiratory system :

Purpose and mechanism of breathing.

Exchange of gases in the lungs and tissue.

Composition of inspired and expired air, vital capacity and its significance.

Regulation of breathing.

Proper breathing habits—breathing through the nose, effects of mouth breathing.

Deep breathing—Ventilation of lungs. Breathing exercises.

Importance of correct posture and loosely fitting clothes for proper expansion of lungs.

2. Food & Nutrition :

Food & its constituents (dealt under Section B 'Nutrition & Cookery').

Digestion, absorption and metabolism of proteins, carbohydrates and fats.

Food storage in the body.

Formation of proper breathing :

Balanced and regular meals—Food facts. Proper chewing of food and other habits—Avoidance of over-eating and abuse of tea, coffee and alcohol.

Digestive-disorders—cause and prevention. Indigestion Constipation, Diarrhoea, obesity, mal-nutrition.

Stimulants and Intoxicants :

Their effects on various systems of the body.

3. Hygiene of the Vascular system :

(i) Blood :

Its composition and functions.

Coagulation of blood.

Haemorrhage—immediate and remote effects.

Blood-transfusion—Blood-grouping and blood-bank.

Anaemia—causes and prevention.

(ii) *Heart & circulation :*

Structure and function of heart. Arteries, Capillaries and veins. Purpose and course of circulation through the body.

Arterial Blood—pressure and Pulse.

Regulation of blood-supply.

Weak-heart and its limitations.

Varicose-veins.

(iii) *Lymphatic system :*

Tissue-fluid and Lymph.

Lymphatic vessels and glands.

Spleen—structure and functions.

4 *Hygiene of the Urinary system :*

Organs forming the urinary system. Structure & function of the kidney. Secretion of urine and its composition. Regulation of volume of urine—

Effects of diet, fluids stimulants, exercise, climatic conditions etc.

5. *Hygiene of the skin :*

Structure and functions of the skin.

Body Temperature :

Heat-production and Heat-loss. Regulation. Response of body to low and high environmental temperatures.

Cleanliness and care of skin.

Bathing—kinds of baths. Protection from sun, wind, frost and irritants.

Skin-parasites of man and diseases caused by them—

Lice, Itch-mite, Bed-bug-flea etc.

Other infections of the skin and their prevention.

Ringworm fungus, oriental sore, prickly heat, acne boils and abscesses.

6. Hygiene of the teeth :

Milk and permanent teeth. Classes of teeth and structure.
Cleanliness and care of teeth.

Dental caries—causes and prevention.

7. Hygiene of the skeletal system—

The Human skeleton and its functions.

Peculiarities of the child's skeleton.

Factors necessary for formation of strong bones.

Posture—correct and faulty.

Effects of faulty posture.

8. Hygiene of joints & muscular system—

Types of joints found in the body illustrated by common examples.

Structure of a joint.

Varieties of muscles—skeletal, smooth, heart—their function.

Levers of the body.

Value of Muscular Exercise—Types of exercise.

Effects of training.

Strenuous exercise.

Fatigue, rest and sleep.

9. Hygiene of the Nervous system—

Cerebrospinal Nervous system—

Brain, Spinal-cord and Nerves.

Voluntary and reflex-actions.

Autonomic Nervous System—

Sympathetic and parasympathetic.

Mental Hygiene—Psychoneurosis, Hysteria.

10. Hygiene of the Sense Organs—

- (i) Eye :—Structure and functions of the eyes—Vision—normal—accommodation—Defects of vision and their correction by suitable glasses. (Myopia, Hypermetropia, astigmatism presbyopia, Squint (clour-blindness).

Care of the eyes.

Causes and avoidance of eye-strain. Cleanliness.

Common eye-affections—causes and prevention.
Conjunctivities, Trachoma.

(ii) Ear :—Structure and functions (hearing and sense of balance and position).

Causes of deafness—Hearing-aids.

Care—Causes of ear-discharge—infections of the ear.

(iii) Organs of taste and smell—

Structure, functions and care.

1. Endocrine system :

Elementary study of the following endocrine glands in relation to—position in the body.

Hormones produced and their role in life.

Symptoms produced by over and under activity. Pituitary, Thyroid, Parathyroid, Adrenals, Thymus, Gonad and Pancreas.

12. Clothing and Shoes :

Materials and their suitability in different climatic conditions.
Construction of dress—fitting and design keeping in view—comfort, convenience and needs of growth.

13. Social customs affecting health :

Child-marriage.

Purdah system etc.

Bacteriology :

General characteristics of Bacteria.

Conditions of life and growth.

Function in nature :

(i) Protein cleavage causing purification and purification of sewage.

(ii) Fermentation—Souring of milk, ripening of cheese and formation of alcohol.

(iii) Nitrification—Nitrogen fixation.

Relation to Disease.

Works of Pasteur, Lister, Koch, Jenner, Manson Ross, Fleming.

Invalid dishes—Soups, dalia, khitchri.

Beverages—Tea, coffee, cocoa, lassi, shikanjhi.

Egg dishes—boiled—hard or half, fried, simple omlets.

Note :—Preparations can be vegetarian or non-vegetarian.

Section C. Mother-Craft and Child-Development :

Anatomy of the Reproductive Organs.

Physiology of Reproduction.

Production of ova and sperms.

Menstruation and the oestrous cycle.

Fertilisation.

Implantation and Pregnancy.

Signs of Pregnancy.

Care of the Pregnant Mother with reference to :

diet, fresh-air, sun-shine, clothing, cleanness, rest, exercise, mental outlook etc.

Minor disturbances during pregnancy.

Toxaemias of pregnancy—symptoms, detection and care.

Ante-Natal clinics and their importance.

Child Development

1. The Scope of Psychology :

The different fields of Psychology and their applications.
Child Psychology—its problem, data and methods.

2. Original Nature and its modifications :

Heredity—its meaning and functioning, environmental effects on growth and development. Meaning of growth. Meaning of maturity. Characteristics of original nature. Race nationality—sex as factors in original nature. Social heredity. Methods and possibilities of modification. Expression, Repression and Sublimation.

3. Human Behaviour :

Meaning of behaviour, specific tendencies determining behaviour. The types of human behaviour.

4. General Tendencies :

Sympathy suggestion and imitation. Play.

5. The Physiological basis of behaviour :

The human nervous system. The glands.

6. The human mind :

Sensation, Perception and concept formation.

Imagination, memory, Day-dreams. Illusions and Hallucinations. Intellect and thought process.

7. Personality Development :

The Physiological basis of Personality.

The influence of mind on personality.

Emotions and sentiments.

Influence of culture on personality development.

Section D. House-Craft and Home-Management :

Sec. 1. House-Craft.

Sec. 2. Home-Management.

1. Scope :

House-hold economics as comprising the general business aspects of both house-keeping and home making. The science and Art of planned family living. Relation to other studies.

2. Family in relation to society :

The family, its importance in individual and social life. The structure and function of family. Domestic and Civil relationship. Privileges and obligations of membership of a family. Mother as a central figure to unite and harmonise her relationship with the husband, children, servants, guests. Uses of leisure, mutual obligations of the community and family.

3. Human Wants :

Character of wants. Different wants, necessities, comforts and luxuries. Efforts and satisfaction. Law of diminishing utility, wealth and welfare. Relative urgency of the organised house-hold. Leisure and its value. The women's activities outside the home.

4. Standard of Living :

Consequents of standard of life. Different standards. Importance of standard of living. Standard of living and

wages. Means of raising the standard. The Indian standard of life, rural and urban standards.

5. House-hold Income and Expenditure :

Money income and real income. Supplementary family income, subsidiary family occupations, spinning, weaving, kitchen, gardening, poultry-keeping, dairying and home-crafts.

Schedule of anticipated income and its allotment between various expenditure. The family budgets, its main items. Principal equimarginal satisfactions.

House-Craft

1. House Selections, site and surroundings—building materials and suitability with regard to comfort, convenience and economy.
2. Arrangement and cleanliness—allotment of rooms according to conveniences; daily, weekly and seasonal cleaning; Equipments used for cleaning, conventional as well as modern labour saving equipments—their use and care.
 - (a) Cleaning of floors, walls, wood and glass. Cleaning and polishing of furniture, doors and windows.
 - (b) Cleaning of utensils, cutlery and crockery. Use of cleaning agents and abrasives.
 - (c) Cleaning and polishing of metals—agents used and their action.
3. Decoration—Decoration of the various rooms according to suitability—Furniture and their designs. Aesthetic sense in decoration. Decoration with useful articles. Hobbies—advantages—use of leisure. Remunerative and recreatory hobbies. Development of aesthetic sense through hobbies.
4. Decoration of the dining room and dining-table. Decoration, presentation and serving of food (Indian and Western).

Practicals :—All the connected activities should be carried out as practical work.

Clothes

1. Clothes. Function; suitability and selection according to purpose.
2. Classification of fibres; their physical and chemical properties—cotton, linen, wool, silk and synthetic (man-made) fibres.
3. Designs and variety in cloth—woven designs and surface designs.

4. Traditional textiles of India :

Brocades, embroidered textiles, cotton-muslins, silk (Kashmiri, Banarasi, Mysore and South India), tapestries and carpets.

5. Khaddar, handloom and mill-made cloths.

Needle craft :

6. The principle stitches (Hem, back stitch, running stitch etc.) and their use.

Darts, tucks, gathers and frills.

Sewing of hooks and eyes and button :

7. Parts of a sewing machine—sewing with the aid of a machine. Care of the machine, oiling and cleaning of the machine—Setting simple faults right.

8. Principles of taking measurements and principles of drafting.

9. Calculation of the approximate quantity of cloth of different widths for the various garments of different sizes.

10. Cutting and sewing of the following garments :

Children's garments—Napkins, chaddis, jangayas, Jablas, rompers, frocks and petti-coats, Baby suits, Blouses, Petti-coats (sari).

11. Embroidery—Simple and effective embroidery stitches—Study of colour harmony.

Practicals :

1. Drafting and cutting and sewing of the garments mentioned above.

2. Embroidery—Table cloth, tray-cloth, Tea Cosis.

3. Knitting—Socks (on two and four needle), baby suit sets.

4. Crochet Wk.—laces, insertions and cloylies.

5. Study of the yarns of the various kinds under microscope.

6. Samples of different design and patterns for a study.

Appendix III

(Ref. Committee of Courses in Home Sc. Res. No. 1 (c)
of May 6 & 7, 1958)

Home Science—II Year.

Section A : Hygiene, Bacteriology, Home-Nursing and First-Aid.

General Hygiene :

1. Health and Disease.

Development of Hygiene and its branches.

2. Air & Ventilation :

Composition and physical properties of air. Impurities of air and their effects on health.

Products of respiration.

Products of combustion.

Products of decomposition.

Dust and micro-organisms.

Industrial pollution of air.

Means employed to minimize dust and smoke nuisance and industrial pollution.

Importance of fresh, pure air—Amount of fresh air required.

Meaning of Ventilation—

Effects on health of defective ventilation and over-crowding.

Test for effectiveness of ventilation.

Cooking power of air—Kata Thermometer.

Floor-space and cubic capacity—

Bye-laws regarding these.

Systems of ventilation—Natural and artificial (with special reference to India).

3. Water-Supply :

Needs. Quantity necessary for healthy living. Composition of water. Impurities in water—their sources and effects on health. Hard and Soft water. Methods of softening water. Sources of water-supply with reference to their suitability.

Rain water. Surface Water—Lakes, tanks, rivers and streams.

Ground or Sub-soil water—Wells & springs.

Pollution of water supply—Its detection and prevention.

Methods of purification of water—Domestic and on large scale. Storage of water.

4. *Food & Nutrition*: To be studied under Dietetics.

5. *Disposal of Refuse and Excreta* in town and country—

(i) Collection of refuse from houses and streets.

Disposal of refuse—Dumping, incineration.

(ii) Collection and Disposal of excreta.

a) Dry Conservancy System—

Types of latrines.

Collection of Night-soil and its disposal.

Manure making.

Disadvantages of hand removal system.

Disposal of sullage.

b) Water carriage system—

Water-closets. Varieties of closets-soil-pipe, House-drain, sewers-traps.

Baths, sinks and urinals—

Testing of Drains.

Inspection, cleaning & ventilation of sewers.

Disposal of sewage:

Land treatment.

Septic-tank treatment.

Activated sludge process—Chemical treatment.

Disposal of slop-water, sullage and effluent from septic tank.

6. *The House*:

i) Selection of site—Effects of climate, soil and surroundings.

(ii) Planning of the house—

Living rooms, kitchen and kitchen-store, baths and lavatories, Garage and Storing space. Open-space, compounds, gardens—cow-sheds, stables, poultry-house etc.

(iii) Construction—with reference to

Foundation—flooring, roof, walls, drains, protection from pest-rats, flies, mosquitoes etc.

(iv) Ventilation and Lighting arrangements.

Ventilation—See under Air and ventilation.

Lighting —Importance of sun-light, artificial lighting, electricity, gas, oils, petroleum products etc.
Direct and indirect methods of lighting.

(v) Heating and cooling arrangements—Air-conditioning.

Bacteriology & Infections :

Definition of Infectious diseases—Endemic, Epidemic, pandemic and sporadic diseases. Stages following infection.

Sources of infection. Channels of infection.

Modes of transmission of infection—

Direct contagion.

Droplet infection—air and dust.

Water and food.

Pomites.

Animal bite, insect transmission—mosquito, sand-fly, fleas, bugs, ticks, mite and lice.

Restraint of infection—

Molification (Notifiable diseases).

Isolation and segregation.

Quarantine.

Disinfection—study of common anti-species and disinfectants.

Methods of disinfection.

Immunisation—Vaccination—inoculation.

Study of the following infectious diseases :

(Their cause, mode of transmission, symptoms, incubation and infective period, methods of prevention etc.).

Small-pox, chicken-pox, measles. Common-cold, influenza, diphtheria, whooping cough. Mumps. Poliomyelitis (infantile-paralysis).

Enteric group of fevers, cholera, dysentery, diarrhoea, Worm infections—(Different kinds of parasitic worms—their life-history, mode of infection, prevention etc.).

Tuberculosis—Leprosy.

Malaria (Life-history of malarial parasites)—Plague.

Hydrophobia (Rabies).

Tetanus.

Home-Nursing & First-Aid :

1. First-Aid methods in connection with Burns and Scalds, Cuts and wounds, Sprains, fractures and dislocations. Haemorrhage, Drowning. Heat and cold stroke. Bites and stings. Foreign-bodies in the eye, ear, nose and throat. Unconsciousness-fainting. Fits and convulsions.

Common poisons and their antidotes.

2. Care of the sick with special emphasis on the care and isolation of an infectious case at home.
3. Preparation and arrangement of the room for confinement—Nursing of the mother and child during this period.
4. Use of the common drugs, antiseptics and disinfectants—Practical methods of disinfection.
5. Medicine—chest and First-aid box.

Section B : Food and Nutrition.*Theory:***i. Diets—**

- (a) Family nutrition and meal planning—what makes an adequate diet for various age groups.
- (b) Meal planning for various income levels in India.
- (c) Costing of diets.
- (d) Low-cost menus which supply the minimum essentials of protective, energy and body-building foods.
- (e) Planning proper meals for a family.
- (f) Planning food for the adults—
 - (a) Man—active, sedentary, over-weight and under-weight.
 - (b) Woman—active, sedentary, over-weight, prospective mother, nursing mother.
- (g) Planning food for adolescents—boys and girls.
- (h) Planning for different age groups.

ii. Food for a baby—

- (a) Schedule on breast and bottle feeding and care of the equipments.
- (b) Food during teething.
- (c) Food during weaning.
- (d) Food supplements at different stages.

- (e) Preparation in regard to formation of good food-habits for later years.
- (f) Daily food needs with regard to quality and quantity.
- iii. Nutritional developments at various stages of growth.
- iv. Developing good eating habits in children—transfer from breast (bottle) to spoon; Introducing new foods; time and place of feeding; size of servings; freedom to choose or leave; guidance in selection of food; rest and calm before eating.
- v. Typical food for small children—
Milk and milk diets, whole grain cereals, eggs and animal proteins, fruits (tomato, citrus), vegetables (leafy), Fats (butter and cream), Vitamin D.
- vi. Fermenting of foods—Yeast and its food value.
- vii. Sprouting of grams and grains—Importance.
- viii. Raising agents—Air, baking powder, Nitra (alcohol), egg.
- ix. Value and place of salads in meals.

Practical :

More of advanced India Cookery—Koftas, Pulao, Kachori, roasted, fried and steamed dishes.

Namkin and Sweets—Samosa, Kasta Kachori, Chevda, Srikant, Gulab Jamun. Gujiya, Laddu, Jelly, Custards.

Invalid dishes—Puddings, thick soups. Barley water, safo etc.

Beverages—sherbets, fruit juices, milk shakes.

Complete meals for different age, income and occupation. levels—costing and assessing them.

Egg cookery—Omelettes, small cakes and pastries.

Sconces, ice-cream, fruit-salads.

Preparation and presentation (decoration) of salad: as full meals and supplementary foods.

Note :—Option of vegetaria or non-vegetaria dishes allowed.

Section C : Mother-Craft and Child Development :

1. Preparations for the arrival of the New-born.

Preparation for confinement in the house importance of having trained assistance.

Maternity homes and hospitals.

2. *Care of the Mother :*

Care during puerperium—

Diet, exercise, rest, clothing, fresh-air, cleanliness. Care of the breast. Puerperal Sepsis—causes and prevention.

Post-natal care—

Diet, exercise, rest, clothing etc.

Importance of breast-feeding.

Time for weaning.

Family-planning and Birth-control.

3. *Care of the New-born and the Young-Baby :*

Feeding—Breast and artificial feeding—quantity and schedule.

Preparation of artificial feeds—cow's milk, patent foods.

Test Feeds—Supplementary feeding.

Food-supplements at various stages—Weaning.

Weight as a guide to good nutrition.

Bathing and Toilet.

Clothing.

Importance of fresh-air and sun-shine.

Proper habit formation with regard to eating, sleeping, elimination, exercise, play, suitable toys etc.

Health protection for children :

Vaccination, Inoculation.

Physical Development of the child :

Weight as a guide to progress—teething.

Record of Health and Disease.

Disorders of Nutrition & Minor Ailments, Cause & Prevention :

Rickets, Dental caries, Scurvy, Malnutrition.

Constipation, Summer-diarrhoea.

Defective Posture—Prevention and correction.

Defects of Vision—detection and correction.

Maternal and Infantile Mortality :

Chief causes and prevention.

*Maternity & Infant Welfare work in towns and rural areas :***Child Development****Education & Child Development****1. History :**

- i) The various theories of education.
- ii) The psychological tendencies in education. Pestalozzi, Herbart & Froebel. Scientific tendency of Herbert Spencer. The sociological tendencies in education and the present eclectic tendency.

2. The Philosophy of Education :

Meaning, scope and function of educational philosophy.

Systematic philosophies of education, naturalism, idealism, realism and pragmatism. The individual society and education.

The School and Social progress.

The educative process.

3. The Basic Education :

Philosophical, cultural, sociological and economic ideas underlying basic education.

4. Modern Methods of Education :

- (a) Montessori Method.
- (b) Kinder-garten method.
- (c) Project Plan Method.
- (d) Assignment system.
- (e) Play-way method of Education.
- (f) Basic Method of Education.
- (g) Scout and Girl Guide Movement.
- (h) N. C. C. and A. C. C.
- (i) Co-curricular activities of institution and their educative value for the development of personality.

Section D Home Management :**1. Housing :**

The choice of a home. Business aspects of owning the house and renting the house. Standards of housing of different

classes. Minimum housing, over-crowding and its effects.
 Arrangements of furniture and accommodation in home.
 Housing legislation. Building Societies. Luxuries.

2. *Household Income and Expenditure :*

(a) *Production in the Home :*

The old self-sufficing home. The extreme modern apartment hotel. The average home both in East and West.

Growing dependence of the home on organised industry.

(b) *Labour in the home :—*

The house-wife, chief labourer. The share of husband and her children. Domestic servants. Labour saving appliances.

(c) *House-hold Expenditure :*

Family budget Studies. Angel's Laws. Financial records of the house-hold. The cash-book. Other records. House credit and debt.

(d) *Food :*

Food choice and storing of food. Relative food costs. Individual and community kitchens. Uneconomic consumptions and wastage of food. Restaurants and tea-shops and their effects on income of working classes.

(e) *Clothing :*

Ready-to-wear, tailor made and home made clothes. Clothing in India. Sewing machine in the home. Choice of clothing, waste in clothing and fashions.

(f) *Capital and Savings .*

Need for saving, temporary saving and permanent saving. Institutions for small and big savings. The savings bank. Post Office Savings Bank and indigenous institutions for savings. Current and deposit banking accounts. The cheque and its uses. Money lenders, borrowing, interest. Life Insurance and different types of policies. Ornaments and their importance in family life.

(g) *Health and Disease, family costs in health, sickness and death.*

(h) *Cultural and other expenses :*

Expenditure on education, travel and recreation. Subscription for personal enjoyment and in support of social Welfare Schemes, Cinema, Library and family outings.

(i) *Maintenance and Replenishing charges :*

House-hold equipment, need to maintain family property intact, repairs. The economic use of clothes, old clothes, packing materials and tins. The problems of storage of household articles.

3. *Economics of Household purchases :*

Wholesale and retail purchases. The retail shop. Piece-meal purchase and purchases for the month. The cooperative store and its importance. Vendors and hawkers pedlars etc. Proper weights and measures. Laws regarding adulteration of food stuffs. Cash purchase and credit purchase.

House-Craft

1. *Decoration :*

- (a) Colour in the home and the colour scheme.
- (b) Curtains and their various purposes and effects.
- (c) Use of lined cloth and their effects.
- (d) Selection of utensils and crockery according to designs and colour scheme.
- (e) Selection of proper paintings and pictures for the various rooms.
- (f) Interior and exterior decorations.

2. Information regarding post-office, telegraph office, telephone office and railway. The facilities and convenience they offer.

Practical—All of the above knowledge should be done in practical work.

Cloths

1. Different kinds of finishes in cloth—anti-crease, mercerised, sensorised, water-proof, heat-proof, tufted, embossed etc. etc.
2. Designs in cloths and designing with fabrics—lines and their effect. Checks and their effect.
3. Fabrics for the various uses—
 - (a) Dress fabrics.
 - (b) Fabric for uphoistering and furnishing.
 - (c) Fabrics for daily wear and house-hold work.
 - (d) Kitchen linen.
4. Principles of drafting and cutting the following garments—Shylwar and Kamis—cholis, pyjamas, kurtas and shirts.

5. Selection of clothes—designs and colours according to one's stature and complexion, smartness of dress—convenience of dresses.

Practicals :

1. Cutting and sewing the garments mentioned above.
2. Embroidery—effective designs and applique on childrens' garments, table clothes and tray covers, Pillow cases, Cloylines and hand bags.
3. Knitting—pull overs or sweaters of at least 2 designs.
4. Crochet—corners, centre pieces and edgings.
5. Samples of different kinds of fabrics.

Mending—Darning, patches of different kinds. renovation of clothes.

Appendix IV

(*Ref. Committee of Courses in Home Sc. Res. No. 1 (d) of May 6 & 7, 1958*)

Home Science (III Year)

Section A : Hygiene, Bacteriology, Home Nursing & First A'd.

Public Hygiene :

Public health administration.

History—Survey of India and other countries.

Town Planning :

Dwelling, markets, roads, parks, open spaces, play-grounds, factories, mills, cremation-grounds, agricultural farms, sewage farms etc.

Public Water Supply :

Standard of purity.

Dual supply of filtered and unfiltered water.

Intermittent and constant supply.

Food Control :

Adulteration of food-stuffs.

Food-poisoning.

Control of diseases spreading through food.

Sanitation :

Disposal of the Dead.

Fairs, camps and markets—sanitary arrangements.

Fairs, camps and markets—medical arrangements.

Control of epidemics and endemic infections.

Health Centres :

Ante-natal clinics, Maternity & Child Welfare centres.

Family planning clinics.

Place and sphere of dispensary, hospitals, sanatoria, Homes for cripples and asylums.

Modern movements for the education of society in the laws of health.

Work of various health organisations :

Municipal & District public-health departments, staff and their duties.

W. H. O.

U. N. A. C.

School-Hygiene :

School building and its surroundings.

Class rooms—size, ventilation & lighting.

Desks and Seats—Adjustable according to the needs of the pupil.

Play grounds. Canteens. Sanitation. Medical inspection of school children.

Protective vaccination and inoculation.

Village Sanitation :

Unhygienic conditions of village

Hygienic planning.

Water supply and rural sanitation.

Role of fixed and travelling dispensaries in controlling sickness in rural areas.

Revision of the First and Second Year's Work.

Section B : Food and Nutrition :

Theory :

- i) Diets—Food for pre-school children.
- ii) Food—School children.
- iii) Vitamins specially needed in nutrition. Good sources, functions and deficiency symptoms of Vitamin A, Vitamin B, Vitamin C, Vitamin D, Vitamin E and Vitamin K.
- iv) Important minerals in food—calcium, iron, phosphorus, iodine and copper—their sources and functions.
- v) Classification of protein foods—Important essential amino acid.
- vi) Nutrition—Indication of good nutrition.
 - a) Physical signs—good health, weight and height in proportion to age and sex; good digestion and elimination, good (sound) sleep on retiring.
 - b) Emotional and mental signs—alertness, poise, well integrated personality and cheerfulness.

vii) Digestive processes and its relation to good nutrition.

viii) Preservation of food—Reasons, aims and objectives for preservation. Principles of preservation. Methods of preservation. Drying (dehydration), pickling, smoking, preserving in syrups—Jams, jellies, bottling, canning, freezing and refrigeration.

ix) Malnutrition and food therapy—

Causes of malnutrition. Deficiency diseases—recognition and treatment—

1. Vitamin deficiencies.
2. Mineral deficiencies.
3. Protein deficiencies.

(Diabetes, disorders of the digestive tract and blood and diseases of urinary system to be learnt under Physiology section).

Practicals :

Complete low cost, high cost and moderate cost menu foods with costing and assessment—Toffies, Barfis, Laddus, Pulao, Local preparation for festivals,

Puddings of different kinds.

Egg preparation.

Sandwiches of different kinds.

Salads and their arrangement.

Biscuits, cakes, preservation of fruits and vegetables.

(Stress to be laid on the importance of the decoration, presentation and serving).

Note : Option of vegetarian or non-vegetarian dishes allowed.

Section C: Child Development :

(Child Psychology)

1. The problem, data and method of psychology with special emphasis on modern methods.

Its relation to other branches. The modern experimental method of the study of the child development.

- 2, *Heredity and Environment* : The facts of Heredity, physiological and Social Heredity. Original nature. The Physiology of nervous system. The functions of glands. The nervous

system. The study of the brain and its mechanism. The stages of nervous adjustment of the child with the environment.

3. The senses and the sense training and the adjustment of the senses to the environment—an experimental study.
4. The body mind problem and its relationship. Nature of consciousness and types of behaviour. Possibilities of modification of original nature and their methods.
5. *Imagination* : Types of imagination—significance of imagination in the development of personality—(The study is to be the observation of a number of concrete cases).
6. The personality of the child—
 - i) The habits and the conditions of habit formation in a child.
 - ii) The laws of learning and the study of learning with child.
 - iii) Emotions and feelings in a child—Emotion and instincts and their relation.
 - iv) Training of emotion in a child (Practical observation also).
7. Nature and causes of problem behaviour—(a) temper, (b) tantrum, (c) fear, (d) jealousy, (e) telling lies, (f) destructive behaviour.
8. *Intelligence* : Its nature—The stages of development of intelligence in a child. Methods of studying intelligence. The apparatus used and their value. The methods of testing intelligence at various age groups. The different types of intelligence tests. (Practical application of some of the intelligence tests).
9. *Learning* : Animals and human learning. Learning by trial and error, learning by insight. Formation and breaking of habits.
10. *Attention* : Its nature and relation to consciousness. Kinds of attention. Conditions of attention.
11. *Perception and sensation* : Illusions and their causes. The study of the various types of illusions.
12. *Memory* : Laws of memory—Condition of good memory, Training of memory.

13. *Thinking and reasoning* : Formation of concepts. Thinking and language and methods of improving them in a child. Methods of developing and educating a child in reasoning.
14. *Feeling and emotion* : The different kinds of motivation. The learnt and unlearned motives. Theories of emotion, moods, sentiments and complexes.
15. *Personality* : Types. Integration of personality.
16. *Psycho analysis and Psychotherapy* : Complexes, neurotic behaviour, causes and cure.
17. *Modern methods of training* : Scouts and guides' movements. N. C. C. and A. C. C. training. Co-curricular activities in institutions, their educative value in the development of personality.

Home Management :

1. *Woman and Civic responsibilities* :

Local authorities, Municipalities, District Boards, Panchayats and their duties. Public utilities like supply of light, water, conveyances, telephone, post and telegraph services etc. Women and local administration. Mainline promotion of social Hygiene and Personal Hygiene.

Income and expenditure of public authorities. National and local taxes. Main Indian Taxes.

2. *Philosophy of home management* :

Responsibilities in home-making.

The efficient home manager.

Time and energy management in home making. Planning, acquiring, skills and improving methods of work. Improving working conditions.

3. *Modern Scientific equipment in India* :

Present condition of the Indian Kitchen equipment. Desirable changes in kitchen work. Materials used in utensils. Changes desirable in Indian kitchen utensils in their material, design and functional aspect.

4. *Woman and the Society* :

The Five Year Plans. The Development of Projects and its implications on her life and her home. Social Welfare organisations, her functions as a member of the society. The National Savings Scheme and her responsibility as a member of the society. The Hindu Code Bill and its implications. The Right of inheritance act.

Woman in relation to Society :

An elementary study of the Indian Constitution. The Right of Franchise The Legislature, its composition and function. The composition and function of the Municipal Board or Corporation. The choice of a career.

Section D : House Craft :

1. Duties of the house-wife. Proper programme for the daily routine work—its advantages and conveniences—arrangement for rest and recreation, social, contacts and social service.
2. Importance and place of clubs, picnics, cinemas, libraries and reading room.
3. Hospitality—Receiving, entertaining, conversing and bidding good bye. The etiquette of the host. Making the guest feel at home; pleasant and cheerful atmosphere and attitude.
4. Etiquette and manners (conduct) of the host and the guest—how to call and take leave pleasantly.
5. Budgets and account keeping (under home economics).
6. Management of servants—attitude towards them—care of the domestic animals and pets.
7. Savings and investments (Home and commerce).
8. The manifold duties of the mistress of the home—her attitude and behaviour with the members of the family—Duty and responsibility to make house a place of happiness, comfort and attraction for all the members of the family—Individual attention and care—Respect of the individuality. Homeliness.

Practical :

Practical training in maintaining accounts, drawing out budget—

Keeping of the accounts of provision, washerman, milkman, grocer etc.

Every other aspect of the subject be given as much practice as possible in the college.

Clothes :*Laundry :*

1. Hard and soft water—disadvantages of washing in hard-water. Softening of hard water.
2. Soaps and soap powders—detergents.

3. Effect of alkali on different fibres.
4. Principles of washing, boiling, blueing, starching and ironing of cotton, silk, wool and synthetic fibres.
5. Principles of issuing, folding and storage of clothes.
6. Starches—kinds, preparations and use.
7. Principles of the removal of stains—animal stains, vegetable stains and chemical stains.
8. Principles of dry cleaning—use of solvents, absorbents etc.
9. Principles of washing fast and non-fast coloured clothes.
10. Principles of dyeing—fast as well as non-fast.

Practicals :

- (1) Hard and Soft water.
- (2) Effect of alkali on different materials.
- (3) Determination of alkalinity of different soaps and detergents.
- (4) Washing, boiling, blueing and starching, ironing, of different garments of different fibres.
- (5) Washing of non-fast coloured garments.
- (6) Preparation, application of starches of different strength.
- (7) Study of the starch grains under the microscope.
- (8) Removal of stains of different kinds.
- (9) Dry cleaning—agents and methods used.
- (10) Storage of clothes using insecticides.

Appendix V

*(Ref. Committee of Courses in Home Sc. Res. No. 2 of
May 6 & 7, 1958)*

1. Under Para III, Human wants, between the second and third sentence add "the importance of planning the days work in order that there is enough leisure for rest, recreation and hobbies."
2. Page 58. Under para (iv) (g) add at the end "Working and repairs of household equipment such as electric appliances, stoves, water tanks, taps, sewing machine."

APPENDIX I

(Ref. Fac. of Sc. Res. No. 20 of Nov. 6, 1958)

Minutes of meetings of the Sub-Committee appointed by the General Education Committee to recommend courses in General Education, held on Monday, the 5th May, 1958 at 12.30 p. m. at the University Office and on Tuesday the 6th May, 1958 at 9.30 a. m. at the residence of Prof. M. V. Mathur.

Present :

1. Dr. M. L. Sharma
2. Principal C. B. Gupta
3. Prof. M. F. Soonawala
4. Prof. M. V. Mathur (*Convener*)

1. The Sub-Committee took into consideration the report of Government of India's Study Team on General Education, the recommendations of Regional Conference on General Education held at Aligarh regarding syllabus in General Education, and the prospectuses of some Indian Universities collected by the University Office. The Sub-Committee also noted the contents of a letter received from the Registrar, Aligarh Muslim University, regarding compilation of teaching material in General Education. The Sub-Committee was handicapped in its deliberations by the absence of 2 experts on General Education, namely Dr. P. Maheshwari (Delhi University) and Dr. Baljit Singh (Lucknow University) who had been specially invited by the University to attend these meetings. The Sub-Committee could not get much help from the syllabi in General Education of other Universities. However, the Sub-Committee consulted a number of books on topics relating to General Education and *resolved to recommend as follows* :—

- (1) The Pre-University course in General Education should be the same as had been prescribed by the University earlier for I. Com. Examination, i. e., it should consist of partly of 'General Science' and partly of Social Studies'. There will be one paper carrying 100 marks. The University's publication entitled 'Samanya Gyan' should be the recommended textbook for this course.
- (2) That the Three-Year Degree Course in General Education to be started in July, 1958 for Higher Secondary Students should

be as follows :—

Three Year Degree Course In General Education

(For B. A., B. Sc. & B. Com.)

First Year Examination 1959.

There will be one paper carrying 100 marks. The paper will be divided into two section—Natural Sciences and Social Sciences as given below :—

Natural Sciences :

1. Evolution of the Earth.
2. The Exterior and interior of the Earth.
3. Work, energy and power.
4. Matter.
5. Atomic nuclei and atomic-energy.
6. Building of molecules.
7. Uniqueness of carbon.
8. Characteristics of living organism.
9. Structure of the cell.
10. Nutrition.
11. Plant and animal metabolism.
12. Reproduction.

Social Sciences :

1. History of Social Evolution :

- (a) Early processes. Primitive societies. Origins of Social institutions, principal factors in social growth. Role of Technology.
- (b) Development of civilisation and culture. Salient features of Ancient and Medieval Civilisations (e. g, the River-Valley Civilisations, Ancient Chinese, Greco-Roman, Arab and Medieval European Civilisations).
- (c) Patterns of Economic organisation
(Pre-Industrial).
- (d) Major Political Ideas.

2. Heritage of India :

- (a) Indus Valley Civilisation and the coming of the Aryans-Vedic age-synthesis of Aryan and pre-Aryan cultures—caste

and social institutions Buddhism and Jainism—social and cultural significance.

- (b) Classical Indian Civilisation.
 - (i) Government and Society.
 - (ii) Intellectual and Cultural attainments.
 - (iii) Cultural Relations with foreign countries.
- (c) The Turkish conquest—The impact of Islam.
- (d) Government and Society in Medieval India.
- (e) Growth of a Composite Indian culture.
- (f) Disintegration of the Mughal Empire and the British conquest of India—Factors and processes.
- (g) British Indian Administration.
- (h) Social and Religious Movements.
- (i) National Movement (1857-1947).

Books recommended :

1. Samanya Vigyan. (Rajasthan University Publication)
2. Samajik Adhyayan. (Rajasthan University Publication)

Supplemented by :

1. History of Science—A Symposium. (Cohen & West).
 2. F. Sherwood Taylor: A short illustrated History of Science (Heinmann).
 3. K. M. Panikkar : A Survey of Indian History (Some additional Books will be suggested by Dr. M. L. Sharma).
3. Second Year of the Three Year Degree Course 1960.

General Education.

Second year Examination of 1959

One paper carrying 100 marks.

The paper will consist of 2 sections as given below :—

Natural Sciences :

1. Science in Antiquity.
2. Contributions of Ancient India to Science.

3. Copernicus and the planets.
4. Bacon and the experimental method.
5. Galileo and Kepler.
6. Harvey's discovery of the circulations of the blood.
7. The development of Scientific instruments in the 17th Century : Microscope, Telescope, Air pump, Thermometer, Barometer, Pendulum clock.
8. Newton and his contributions.
9. Concept of Evolution and Darwin's theory.
10. (a) Mendel's concepts of Heredity.
(b) Birth of genetics.
11. Discoveries of Pasteur and Koch.
12. Some important Scientific discoveries of the 19th Century : Dynamo and motor, Wireless, Electron X-Rays, Synthetic dyes.
13. Modern Scientific developments : Radio-Activity, Atomic Energy : Plastic and synthetic fibres, Antibiotics, Viruses.
14. The Scientific Method.
15. The impact of Science on Modern life.

Social Sciences :

1. Problems of Economic Development.
 - (a) The Industrial Revolution.
 - (b) Problems of Economic organisation in the modern world.
 - (c) Capitalism, Socialism, planning and welfare-economics. The economics of Imperialism and Colonialism.
 - (d) Economic problems of the under-developed regions.
 - (e) International Economic Cooperation.
2. Problems of Political Organisation.
 - (a) Basic concepts of Liberalism and Socialism.
Principles of Democratic Organisation.
Main types of Constitutions—
Unitary, Federal, Presidential and Parliamentary.
 - (b) Modern Imperialism and Imperialist conflicts. The resurgence of Asia.

- (c) International Organisation—The U. N. Charter—The U. N. and its subsidiary Organisations—Maintenance of World Peace.

3 Problems of Modern India.

- (a) The Indian economy—Five Year Plans—Planning and Democracy.
- (b) Indian Constitution—Problems of Federal Policy—Public Administration, Regionalism, Nationalism.
- (c) The problems of Cultural Regeneration—growth of composite culture.

Books recommended :

The following in addition to the books recommended for the First Year Course :

1. F. Sherwood Taylor : World of Science. (Publisher-Heinmann).
2. Westaway : The Endless Quest : Three Thousand Years of Science. (Blackie, 1934, 21 S.)
3. R. C. Majumdar : Advanced History of India. (for teachers).
4. Nilkant Sastri : History of India. (for teachers).

(Some additional books will be suggested by Dr. M. L. Sharma).

4. Third Year of the Three Year Degree Course, 1961

General Education

The final year's course in General Education will not include the study of any prescribed books. There will be one paper on 'General Essay' carrying 100 marks. The General Essay paper will consist of 2 short essays in Hindi or English on the subject of General Education (as recommended earlier by the Faculty of Arts Committee). Each College will arrange for a weekly Seminar on General Education, besides some tutorials for writing general essays. In the weekly Seminars, topics relating to the courses in Natural Sciences and Social Sciences already covered in the first 2 years should be discussed in a more comprehensive manner. It is expected that all the teachers handling General Education courses will guide the Seminars discussions.

II. The Sub-Committee postponed consideration of other items on the agenda. The Sub-Committee, however, *resolved that* the 3-Year

degree course to be started in July 1958 should include something about Humanities also in the General Education course.

III. The Sub-Committee recognized that the success of the General Education Courses will depend upon proper arrangements for their teaching. The Committee further recommended that the University, in conjunction with the Government of Rajasthan and the University Grants Commission and the Ministry of Education, Government of India, should convene a conference of all those teachers in affiliated colleges who are expected to teach this course. In a conference or Seminar of this type it will be possible to acquaint the teachers concerned with the objectives of this course and the approach that should be followed in teaching the same.

IV. The Sub-Committee adjourned after authorising the Convener and Dr. M. L. Sharma to make any further recommendations on behalf of this Sub-Committee, in connection with the Education Courses to be started in July, 1958.

M. V. Mathur
Convener.

APPENDIX I 2

(*Ref. Fac. of Sc. Res. No. 20 of Nov. 6, 1958*)

Minutes of a meeting of the Sub-Committee appointed by the General Education Committee to recommend Courses in General Education, held on Monday, the 8th September, 1958, at 1.00 p. m. in the University Office, Jaipur.

Present :

1. Dr. M. L. Sharma
2. Principal C. B. Gupta
3. Prof. M. F. Soonawala
4. Prof. M. V. Mathur (*Convener*)

The Sub-Committee reviewed the Syllabi and Text-books in General Education for the first year/second year and final year examinations of the Three-year-Degree Course for the years 1960, 1961 and 1962, respectively, after taking into consideration Dr. P. T. Raju's letter together with the recommendation of the Board of Studies in Philosophy regarding Courses in General Education, and the Ministry of Community Development's (Government of India, New Delhi) letter dated the 24th October, 1957 regarding inclusion of Community Development Programme in University Courses, and *resolved to recommend* as follows:—

I. That the following be added to the course prescribed earlier for the first year examination under Social Sciences :—

- (a) Add between "History of Social Evolution" and "Heritage of India" :

Religion & Philosophy; outlines of Hinduism, Buddhism, Jainism, Christianity and Islam.....their correlation..... the fundamental unity of basic principles of religions; Vedanta and Sankhaya.

Principles of literature (Poetry and Prose) with suitable examples and universally accepted Principles of literary appreciation.

- (b) Add the following to the second year course prescribed earlier :

Under paragraph 3 (a) of page 4 of the cyclostyled syllabus add "Community Development Programme".

The Sub Committee, however, felt that for bringing up proper co-ordination in the recommended syllabi it should have the advice of

two expert committees consisting of Dr M. L. Sharma, Dr. Ramanand Tiwari (Bharatpur) and Prof. M. V. Mathur for Social Sciences (including religion and literature); and Prof. M. F. Soonawala, Dr. Daya Krishna (Jodhpur) and one other Science Professor for Natural Sciences. The Convener of the Sub-Committee should co-ordinate their work.

II. The Committee took into consideration Prof. M. V. Mathur's letter No. M-42/17 dated the 17th August, 1953 and *recommended that* the proposed seminar or conference should take place as suggested.

M. V. Mathur
Convener.

APPENDIX J

(Ref. Fac. of Sc. Res. Nos. 13, 18, 19 & 20 of Nov. 6, 1958)

The minutes of the meetings of the Board of Studies in Agriculture, held on 8th, 9th and 10th of May 1958, at the University Office, Government Hostel and University Office, respectively.

Present :

1. Shri D. Gupta
2. Dr. R. M. Singh
3. Dr. A. Rathore (*Convener*)

1. (a) The Board recommended the revised ordinances, scheme of examinations and syllabi (*Appendix*) for the following examinations (to commence from the years of examination noted against each) :

(i) Pre-Professional (Agriculture)	—	1960
(ii) B. Sc. Ag. Part I ...	—	1961
(iii) B. Sc. Ag. Part II ...	—	1962
(iv) B. Sc. Ag. Part III ...	—	1963

(b) The Board recommended that the syllabi for B. Sc. Ag. Part I and B. Sc. Ag. Part II of the present scheme may be repeated for these examinations of 1960 and 1961 respectively.

2. Under Section 34(4) (iv) of the University Act, the Board elected Dr. R. M. Singh to serve on the Committee for Selection of Examiners in Agriculture for the examinations of 1959.

3. The Board revised the Panel of Examiners.

4. The Board reviewed the examination papers set for the B. Sc. Ag. Part I and B. Sc. Ag. Part II examinations of 1958 and observed as follows :—

B. Sc. Ag. Part I

Genetics, Animal Breeding and Veterinary Science:

The paper contains a spelling mistake.

B. Sc. Ag. Part II

Dairy and Animal Husbandry :

The paper was unbalanced in that the examiner ignored the major portion of syllabus in setting questions.

Agricultural Engineering :

The question no. 10 did not mention the type of irrigation appliance.

5. The Board considered the letter No. 1199 and 1794 dated the 8th February and 28th February, 1958 respectively from the Principal, Jaswant College, Jodhpur and the connected correspondence. The Board observed that ordinarily the teacher should be the internal examiner. In cases where, because of some definite reason, the teacher in a subject cannot be appointed internal examiner, the award of the marks should be made by the internal examiner concerned.

6. The Board considered the remarks sent by the Syndicate regarding the qualifications for teachers in Agricultural Economics, Statistics, Farm Management and Extension, and observed as follows :—

- (i) In some foreign Universities an M. Sc. degree is awarded in Agricultural Economics, provision had been included in order not to debar persons who have obtained such degrees.
- (ii) Agricultural Economics is not taught as solitary subject in Colleges of Agriculture. With it are associated Statistics, Farm Management and Extension as subjects of equal value. Persons who have obtained their M. A. in Economics by offering a special paper in Agricultural Economics are not likely to be found suitable for teaching these subjects and would, therefore, be of a very limited utility in a college of Agriculture.

7. The Board decided to recommend the following books for general reading :

1. Basic Statistics, Rajasthan (Annual).
2. Quarterly Digest of Economics & Statistics (Quarterly).
3. First Five Year Plan—An Appraisal :
 - i) Irrigation.
 - ii) Agriculture and Community Development.
 - iii) Power.
 - iv) Roads & Transport.
 - v) Social Services.
4. Second Five Year Plan
 - i) Annual Progress Reports.
 - ii) Quarterly Progress Reports.

8. With reference to the observation made by the Board of Studies in Agriculture (Item No. 5) at its meeting held on the 12th of September 1957, the Board examined the proportions of the sessional and test marks obtained by the candidates at the examination of 1957 and found that they were of the same order, calling for no further action in the matter.

A. Rathore
Convener.

Appendix

(Ref B. O. S. in Agriculture Res. No. 1 (a) of
May 8, 9 & 10, 1958)

B. Sc. (in Agriculture) Examination.

- O. 229. Admission in the the three year degree course leading to the award of B. Sc. in Agriculture degree shall be preceded by the candidate having satisfactorily passed a course of study, called Pre-professional (Agriculture) of one year's duration.
- O. 229-A. Every candidate for admission in the Pre-professional (Agriculture) course shall be required to have passed the Higher Secondary or High School or equivalent examination conducted by a University, Board or other examining body recognised by the University of Rajasthan. The examination shall be conducted after the candidate has studied for one academical year at an institution recognised by the University.
- O. 229-B. After the candidate has passed the Pre-professional (Agriculture) examination, he shall be granted a certificate by the University to this effect.
- O. 229-C. The subjects of study and the allocation of marks at the Pre-professional (Agriculture) examination shall be follows:—

Pre-professional (Agriculture)

Subject	Written			Practical		
	Test	Sessional	Minimum pass marks	Test	Sessional	Minimum pass marks
1. English	30	20	18	—	—	—
2. Economics	30	20	18	—	—	—
3. Physics	30	20	18	30	20	18
4. Chemistry	30	20	18	30	20	18
5. Botany	30	20	18	30	20	18
6. Zoology	30	20	18	30	20	18
Total	180	120	108	120	80	72

Total marks for the examination 500.

Minimum pass marks in the aggregate 180.

Notes :—1. The minimum percentage of marks required for a pass in the first, second and third division is 60, 48 and 36 respectively in the aggregate. A candidate securing 75% marks in any subject (theory and practical combined) and passing in the examination as a whole shall be granted distinction in that subject.

2. The written and practical examinations shall each be of three hours' duration.

O. 230. The three year degree course in Agriculture shall consist of three examinations conducted at the end of each academical year. The one at the end of the first year being called B. Sc. Ag. Part I, the one at the end of the second year being called B. Sc. Ag. Part II and the one at the end of the third year being called B. Sc. Ag. Part III.

Diploma of passing B. Sc. (in Agriculture) examination shall be awarded after successfully completing the course of study laid down for all the three years.

O. 231. Only such candidates as have successfully passed the Pre-professional (Agriculture) examination shall be eligible for admission at the B. Sc. Ag. Part I. They shall be eligible for appearing at the examination (B. Sc. Ag. Part I) after completing a course of study for one academical year at an institution recognised by the University of Rajasthan.

O. 231-A. A candidate who has passed the Intermediate Science or its equivalent examination conducted by a University, Board or other examining body recognised by the University of Rajasthan, with Chemistry and Biology shall be eligible for admission at the B. Sc. Ag. Part I. They shall be eligible for appearing at the examination—(B. Sc. Ag. Part I) after completing a course of study for one academical year at an institution recognised by the University of Rajasthan.

O. 231-B. Candidates who have passed the B.Sc. Ag. Part I examination shall be eligible for admission at the B. Sc. Ag. Part II and those who have passed B. Sc. Ag. Part II examination shall be eligible for admission at the B. Sc. Ag. Part III. In each case they shall be eligible for appearing at the examination (B. Sc. Ag. Part II and B. Sc. Ag. Part III) after completing the course of study for one academical year respectively at an institution recognised by the University of Rajasthan.

- O. 232. The subjects of study and the allocation of marks for the various examinations shall be as follows :

B. Sc. Ag. Part I

	Written			Practical		
	Test	Sessional	Minimum pass marks	Test	Sessional	Minimum pass marks
1. Agronomy I	30	20	18	—	—	—
2. Animal Husbandry I	30	20	18	30	20	18
3. Agricultural Engineering I	30	20	18	30	20	18
4. Mathematics	30	20	18	—	—	—
5. Agricultural Chemistry I	30	20	18	30	20	18
6. Agricultural Botany.	30	20	18	30	20	18
Total	180	120	108	120	80	72

Total marks for the examination 500.

Minimum pass marks in the aggregate 180.

B. Sc. Ag. Part II

	Written			Practical		
	Test	Sessional	Minimum pass marks	Test	Sessional	Minimum pass marks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Agronomy II	30	20	18	30	20	18
2. Animal Husbandry II	30	20	18	30	20	18
3. Agricultural Economics & Statistics	30	20	18	30	20	18
4. Agricultural Engg. II	30	20	18	30	20	18
5. Agricultural Chemistry II	30	20	18	30	20	18

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
6. <i>Mycology and Entomology—</i>							
(a) <i>Mycology and Bacteriology</i>	15	10	9	15	10	9	
(b) <i>Entomology & Parasitology</i>	15	10	9	15	10	9	
Total	180	120	108	180	120	108	

Total marks for the examination 600.

Minimum pass marks in the aggregate 216.

B. Sc. Ag. Part III

	Written			Practical		
	Test	Sessional	Minimum pass marks	Test	Sessional	Minimum pass marks
1. <i>Agronomy III</i>	30	20	18	30	20	18
2. <i>Dairying</i>	30	20	18	30	20	18
3. <i>Horticulture</i>	30	20	18	30	20	18
4. <i>Farm Management & Extension :</i>						
(a) <i>Farm Management</i>	15	10	9	15	10	9
(b) <i>Extension</i>	15	10	9	15	10	9
5. <i>Agricultural Chemistry III</i>	30	20	18	30	20	18
6. <i>Plant Protection :</i>						
(a) <i>Plant Pathology</i>	15	10	9	15	10	9
(b) <i>Animal Pests etc.</i>	15	10	9	15	10	9
Total	180	120	108	180	120	108

Total marks for the examination 600.

Minimum pass marks in the aggregate 216.

Notes:—1. The minimum percentage of marks required for a pass in the first, second and third division is 60, 48 and 36 respectively in the aggregate. A candidate securing 75%

Divisions of Economics—Consumption, production, exchange, distribution and their relationship.

Consumption: Wants and their characteristics. Classification of wants and their satisfaction. The law of marginal, equimarginal and total utility. Consumer's surplus. Standard of living.

Production: Production processes. Various types of utilities. Factors of production.

Land. Definition, characteristics and factors affecting its productivity. Natural resources of India with special reference to agricultural needs.

Labour: Definition, characteristics and classification. Supply and Demand. Theories of population—Malthusian and Optimum. Factors affecting efficiency of labour.

Capital: Importance, function and characteristics. Difference between capital and wealth. Forms of capital. Accumulation of capital. Use of machinery and its effects.

Organisation: Division of labour, advantages and disadvantages. Large scale production and its limitations and enterprises.

The Laws of Production: The law of equimarginal productivity. The laws of increasing, constant and diminishing returns.

Exchange: Barter, theory of exchange. Markets and their classification time and space, perfect and imperfect. Marginal utility and marginal cost of production. Laws of demand and supply, elasticity of demand. Theory of value. Prices in long and short period markets. Money, its functions and classification. Inflation and deflation.

Distribution: Problems of distribution. Measurements of national dividend. Social accounting, distribution of income. Marginal productivity theory.

Rent: Economic & contract rent, factors affecting these. Determination of rent. Ricardian Theory of rent.

Wages: Money and real wages. Time and (piece wages. Theories of wages.

Interest: Gross and net interest. Determination of interest.

Profit: Gross and net profit. Analysis, risk, remuneration and surplus.

Taxation: Definition and characteristics. Canons of taxation. Direct and indirect taxes. Agri-income tax.

Physics:*Paper.*

Units and measurements; length, area, volume; mass; time. Metric system. The vernier and the micrometer scales. The balance.

Velocity: Acceleration and momentum. Rectilinear motion. Composition and resolution of velocities; the parallelogram law.

Force and motion, inertia. Newton's laws of motion, measure of a force. Composition and resolution of forces. Gravity and laws of falling bodies; mass and weight, centre of gravity, centripetal and centrifugal forces defined.

Equilibrium of forces, triangle of forces, simple illustration of friction and its laws. Stable and unstable equilibrium.

Pressure of liquids at rest and its variation with depth. Transmission of liquid pressure. Hydraulic press. Principle of Archimedes. Law of hydrometer. Specific gravity.

The atmospheric pressure. Boyle's Law. Force and suction pumps. Siphon.

Work, power, efficiency of machines, definitions and simple illustrations. Matter and energy, different forms of energy.

Heat energy:—Sources, modes of transference, effects of heat on matter, thermometer, specific heat, evaporation, radiation and boiling, vapour pressure, condensation and frost, latent heats, hydrometer and dew-point.

Radiant energy:—Source of light, modes of propagation, light waves, shadows, illumination, reflection, refraction, magnification of images by lenses, telescope, microscope.

Magnetic energy:—Magnets; magnetism, compass, magnetic field.

Electrical energy:—Electrification by friction, insulators, conductors, electricity generated by chemical action, magnetic effect of current, principle of the dynamo, electromagnets, resistance. Ohm's law. Units of measurement, transformation of electric energy into heat, light and power. Practical acquaintance with galvanometers, voltmeters and ammeter.

Practical:

Accurate determination of length, area, mass, volume and density. Use of callipers, screw-gauge, balance and squared paper.

Determination of acceleration due to gravity with a simple pendulum.

Verification of law of parallelogram of forces.

Verification of the principle of the lever.

Determination of efficiency of a system of pulleys.

Determination of specific gravities of liquids.

Verification of Boyle's law and practice in a barometer reading.

Use of density bottle, determination of volume, weight, sp. gr. and pore space of soils.

Capillary movement of water in different types of soils.

Practice in reading various thermometers.

Determination of specific heat by method of mixture.

Determination of latent heat of fusion. Reflection of light, uses of plane mirror.

Refraction of light, determination of refractive index.

Determination of focal length of a converging lens.

Practice in use of telescope.

Charting of lines of forces due to a magnet in different positions.

Construction of a simple cell and use of the simple galvanometer.

To connect lamps in series and in parallel to a source of current.

Verification of Ohm's Law.

Determination of electric resistance by substitution method.

Determination of unknown resistance by meter bridge.

Chemistry:

Section A

Paper.

General introduction and study of the fundamental principles and the laboratory processes of Chemistry.

Elements of atomic theory, laws of chemical combination by weight; Avogadro's hypothesis; atoms; molecules; valency; determination of atomic weights and equivalent weights.

Boyle's law and Charles law, gas law, absolute temperature, critical temperature and pressure.

Acids, bases and neutralisation; normal, acidic and basic salts.

Elementary study of nature of dissociation and ionic theory. Faraday's laws. Hydrolysis of salts.

Chemical calculations based on the gas laws, molecular and equivalent weights, chemical equations, acidimetry and alkalimetry.

Inorganic Non-Metals:—Occurrence, preparation and properties of the following elements and compounds.

Hydrogen and Oxygen. Oxidation and reduction.

Water: Hardness of water and its removal.

Nitrogen, its oxides (Nitrous and Nitric), nitric and nitrous acids; Ammonia; Nitrogenous fertilisers, N-fixation and N-cycle.

Halogens: Chlorine, bromine and iodine; hydrochloric acid and halides.

Sulphur, SO_2 , sulphuric acid and sulphates, sulphurated hydrogen and sulphides.

Phosphorus, its oxides and acids in general. Phosphatic fertilisers.

Arsenic and its use in insecticides.

Metals:—Occurrence, properties and uses of the following metals and general study of their compounds.

Sodium:—Hydroxide, Nitrate, Carbonate and Chloride.

Potassium:—Hydroxide, Nitrate, Chloride, Bromide, Iodide, Carbonate, Sulphate; Permanganate and Dichromate.

Zinc:—Oxide, Chloride Carbonate and Sulphate.

Calcium:—Oxide, hydroxide, carbonate, phosphate and bleaching powder.

Manganese:—Oxides, Chlorides and Sulphates.

Iron:—Outlines of its metallurgy, wrought and cast iron, steel; oxides and sulphates.

Aluminium:—Oxides, chlorides, sulphates and alum.

Silver:—Halides, nitrate. photography and silvering of mirror.

Mercury:—Oxides and chlorides.

Section B

Study of carbon, its allotropic forms and properties, its oxides. Fuel gases. Carbon cycle in nature.

Organic Chemistry:

Introduction and study of methods of purification of organic compounds. Detection of C, H, Halogens, N S & P in organic

compounds. Determination of molecular weights by methods of vapour density, freezing point, boiling point and chemical methods.

Empirical, molecular and structural formulae.

Isomerism and polymerism.

Occurrence, preparation, characteristic properties and structure of the following series with emphasis on compounds mentioned:—

Hydrocarbons, saturated and unsaturated: Methane, Ethane, Ethylene and Acetylene.

Halogen Derivatives of Hydrocarbons: Chloroform, Iodo-form and Carbon-tetra-chloride.

Alcohols: Methyl and Ethyl alcohols. Glycerol.

Aldehydes & Ketones:—Formoldehyde, acetaldehyde and acetone.

Ethers: Diethyl ether.

Acids:—Formic, acetic, oxalic, lactic, citric, tartaric, butyric, palmitic and stearic acids.

Acid Derivatives:—Acetylchloride and acetic anhydride.

Esters:—Esterification and hydrolysis.

Practical:—

(1) Preparation of standard solutions by weighing oxalic acid and sodium carbonate, and standardisation of acid and alkali solutions.

(2) Acidimetry and alkalimetry.

(3) Volumetric estimation of carbonate and hydroxide in a mixture of two.

(4) Analysis of the simple salts, soluble in water or hydro-chloric acid, composed of the following radicals as basic and acidic (dry and wet methods):—

Basic: Ag, Pb, Hg, Cu, As, Fe, Al, Zn, Mn, Mg, Ca, Ba, Na, K and (NH₄)

Acidic: Cl, Br, I, SO₄, NO₃, PO₄, S, CO₃, C₂O₄ and acetate.

(5) Analysis of a mixture (soluble in water or hydrochloric acid) of four radicals two basic and two acidic, not containing two metals of the same group, and not containing interfering acid radicals. (In case phosphate is given at least one metallic radical shall be from I or II groups).

Botany :

*Paper*1. *Introduction :—*

- (a) Study of plants in general.
- (b) The importance of the knowledge of Botany in relation to Agriculture.

2. *External Morphology of vegetative plant organs :—*

Stem, root and leaf; their modifications and functions.

3. *Internal morphology :—*

- (a) Structure of a typical plant cell; cell contents; mitotic division of cell; organisation of tissues and tissue systems.
- (b) Internal structure of both dicot and monocot, stem, root and leaf. Secondary growth.

4. *Reproduction :—*

- (a) Vegetative reproduction including layering, cutting, grafting and budding.
- (b) Sexual reproduction :—
 - (i) Structure of flowers; functions of different parts of flowers, inflorescence of different types
 - (ii) Pollination :
 - (iii) Fertilization, elementary knowledge only.
 - (iv) Fruits, types and dissemination.
 - (v) Seeds; structure and germination of typical dicot and monocot seeds (pea, castor, maize and onion). Dissemination of seeds in nature.

5. *Classification of plants :—*

- (a) An elementary study of classification of plant kingdom to illustrate the grades of evolution from bacteria to angiosperm.

- (b) A study of the botanical characters of the following families:—

Cruciferae : (Brassica; Eruca; Raphanus)

Compositae : (Helianthus)

Liliaceae : (Allium)

Linaceae : (Linum)

6. *Plant Physiology* :—

Elementary knowledge about the following physiological processes :

- (a) Absorption of water by plants.
- (b) Transpiration.
- (c) Photosynthesis.
- (d) Respiration.
- (e) Growth.
- (f) Movement.
- (g) Hetrotrophic mode of nutrition – Parasitism Saprophytism.

Practical :

1. A general study of the plant as a whole.
2. A study of structure and germination of typical dicot and monocot seeds.
3. Examination and description of various types of roots, stems, leaves, their parts and modifications.
4. A study of the structure of flowers, their parts and functions of the parts.
5. Examination and identification of fruits and seeds.
6. General survey of the plant kingdom with important examples of each group.
7. A study of the external characters of field plants belonging to the families given in the syllabus.
8. Uses of microscope.
9. Free-hand sectioning with staining practice of root, stem and leaf together with their examination and description.
10. Microscopic examination of various living and non-living cell contents.
11. Demonstration of simple experiments on plant physiology bearing on the theory courses.

Note-books containing records of the practical work shall be maintained by each student.

Zoology :

1. *Introduction*—The chief characters of living organisms; differences between plants and animals. The subject matter of Zoology and its different aspects of study. General consideration of the properties

of protoplasm, structure of the animal cell, cell division, passing mention of important tissues and their functions.

Principles of classification and nomenclatures in general.

2. *Animal Organisation*—Systematic position of representative types from Protozoa to Chordata of the following phyla. Stress should be laid on the general characters and economic importance of the groups.

- (1) *Protozoa*—Amoeba its structure, habit, locomotion, feeding and reproduction.
- (2) *Coelenterata*—Hydra, its external structure, mode of life and reproduction.
- (3) *Platyhelminthes*—Tapeworm (*T. Solium*), its external and internal anatomy and life history.
- (4) *Nemathelminthes*—The life history of the Roundworm (*Ascaris lumbricoides*).
- (5) *Annelida*—Earthworm, its external anatomy and mode of life.
- (6) *Arthropoda*—Distinguishing characters of the different classes with two examples of each. Cockroach, its external features, life history and internal organisation.
- (7) *Mollusca*—External features of pond snail.
- (8) *Chordata*—Broad outlines of classification.
 - (a) *Class Pisces*—External characters of *Rahu* fish. Common edible fishes of Rajasthan.
 - (b) *Class Amphibia*—Frog, its life history and internal organisation with reference to the physiology of digestive, circulatory, respiratory, excretory and reproductive systems. Study of the skeleton.
 - (c) *Class Reptilia*—Identification of common poisonous and non-poisonous snakes of Rajasthan.
 - (d) *Class Aves*—Common birds of agricultural importance.
 - (e) *Class Mammalia*—Common mammals of agricultural importance.

3. An elementary knowledge of the histology of the epithelial tissue, stomach, intestine, lungs, liver, kidney, ovary and testes of frog.

Practical:

1. Identification of animals given in the course.
2. Simple dissection of frog and cockroach for study of the general internal organisation.
3. Preparation of microscopic slides in glycerine:
 - (a) Salivary gland of cockroach.
 - (b) Trachea of cockroach.
 - (c) Mouthparts of cockroach.
4. Study of the plan of structure of the main parts of axial and appendicular skeleton of frog.
5. Microscopic examination of the structures as given in paragraph 3 of the theory course.
6. Candidates will be required to produce at the practical examination their laboratory note books.

B. Sc. (Ag) Part I

Agronomy I

Paper—Soils and Fertilizers :

A—Soils :

- (i) *Soil Geology* : Origio of soils, classification, nature and mineral composition of the important soil forming rocks and chief characteristics of the following :
 - (a) Igneous—Granite and Basalt, (b) Sedimentary—Lime-stone and sand-stone, (c) Metamorphic—schists, marble, slate and quartzite.

Importance of feldspar in the formation of clay soils.
- (ii) *Soil formation* : Weathering, factors affecting it. Geological classification of soils.
- (iii) *Soil Texture*—Soil separates, their properties and agricultural classification of soils, soils of Rajasthan. Relation of size of particle to surface area and resistance to cultivation operations.
- (iv) *Physical properties* : Colour, specific gravity, volume, weight, porosity, plasticity, cohesion, adhesion and flocculation.

- (v) Soil-structure—Arrangement of soil particles. Types of soil structures. Granulation factors affecting and its promotion in cultivated soils.
- (vi) Soil moisture : Sources and classification, movement of soil water. Soil moisture constants e. g. hygroscopic coefficient, wilting coefficient, moisture equivalent, water holding capacity, availability of moisture to plants. Removal of excess moisture from fields. Moisture limits for successful cultivation. Water requirement of crops.
- (vii) Soil Air : Air capacity of soils capillary and non-capillary pores. Gaseous exchange between atmospheric and soil air. Soil aeration.
- (viii) Soil Temperature, its sources, variation and effects on crop growth. Regulation of soil temperature.

B—Manures and Manuring :

- (i) Elements necessary for plant growth. Their function and sources. Classification of manures.
- (ii) Preparation, composition and application of organic manures such as F. Y. m. compost and sheep dung. Use of oil cakes as manures.
- (iii) Green manuring, plants used, character of a green manure, crops and stage of turning. Factors affecting the growing and use of green manure crops and their limitations.
- (iv) Effect of organic manures on the soil structure. Presence of lime in soils and its importance in the production of plant-food.
- (v) Sources, composition and application of fertilizers such as ammonium sulphate, sodium nitrate, calcium cyanaxide, ammonium sulphate-nitrate, bone manures, superphosphate, basic slag and sulphate of potash.
- (vi) Quantity, time and method of application of organic and inorganic manures to crops under different soil and climatic conditions.
- (vii) Phosphate fertilization of legumes.

Animal Husbandry I :

Paper—

1: General :

- (a) Importance of Animal Husbandry and Dairying in India and particularly in Rajasthan.
- (b) Livestock statistics in Indian Union and Rajasthan.

- (c) Milk production statistics in Indian Union and Rajasthan.
- (d) Per capita consumption of milk in Indian Union and Rajasthan.

II. *Breeds of Livestock :*

- (a) Cattle: Sahiwal, Sindhi, Tharparker, Gir, Hariana, Ongole, Kankrej, Nagori, Amritmahal, Malvi and Mewati.
- (b) Buffaloes, Murrah, Mehsana, Jaffarabadi, Nagpuri and Bhadawari.
- (c) Sheep: Bikaneri, Decanni, Hissar-dale, Kathiawari, Lohi and Nellore.
- (d) Goats: Jamunapari, Barbari, Beetal, Surti, Alwari and Sirohi.
- (e) Camels: Bikaneri, Jaisalmeri, Marwari, Mewati, Shekhawati and Sanchori.
- (f) Poultry: Rhode Island Red, white Leghorn, Black Minorca, plymouth Rock, Improved Desi and Asil.

III. *Selection of Live-stock :*

General hints on selection of live-stock. Score card, performance, pedigree and history sheets.

IV. *General Management :*

- (a) Housing, location and grouping of different buildings on a Dairy Farm. Selection of site. Detailed study of cattle-sheds, bull-sheds, calf-pens, paddocks, milking pailour, milk recording room, dairy creamery, calving sheds and segregation ward. Requirement and arrangement of the floor space in the various buildings.
- (b) General care of cattle: Grooming, exercise, bathing, milking, observation of heat (oestrus), covering with a bull, drying of cows, care during pregnancy, care at parturition. Production of clean milk.
- (c) Care of calves: Care and feeding of weaned calves, numbering of calves (tattooing, branding, notching and ear-tagging), castration and dehorning.
- (d) Management of Bull: Feeding, handling, exercise and service.
- (e) General study of care, management, housing and equipment of sheep, goats, camels and poultry.

In cubation principles and practice. Docking and shearing of lambs.

V. *Feeds and Feeding :*

Feeding stuffs and their classification. Physiology of digestion. Study of roughages and concentrates. Preparation of silage and hay. General principles of feeding cattle. Mixing of rations. Feeding standards. Computation of rations for calves, heifers, young bulls, down-calvers, milch cattle, stud-bulls, bullocks, buffaloes, sheep, goats, camels and poultry.

VI. *Dairy Farm Management :*

Fodder requirement of a dairy farm. Cropping schemes for the supply of succulent fodder throughout the year. Pasture lands and their management. Land and labour requirements. Maintenance of different dairy and cattle registers including pedigree and history sheets. Hard registration. Purchase of dairy cattle and bullocks.

Practical :

1. External parts of the cow.
2. Alimentary organs of the cow, poultry and sheep.
3. Approaching and handling of animals.
4. Grooming of animals.
5. Cleaning of cattle-sheds.
6. Exercise of cow, bull and calves.
7. Determination of body weight of animals by formula.
8. Determination of age by (1) Dentition and (2) Horns.
9. Numbering the animals (i) Tattooing, (ii) Notching, (iii) Branding and (iv) Metal ear tags.
10. Dehorning.
11. Castration.
12. Observation of signs of heat and signs of pregnancy.
13. Care of pregnant animal.
14. Observation of calving.
15. Care of the calf at birth.
16. Drying the cow.
17. Putting nose-ring to a bull.
18. Feeding of weaned calves.

19. Mixing and preparation of balanced rations for dairy cows and other animals.
20. Judging of dairy cows, heifers, bulls and bullocks by means of score card.
21. Judging sheep, goat and poultry.
22. Study of cattle market.
23. Hygiene milking of cows and buffaloes. Methods of milking and milk recording.
24. Determination of temperature, pulse and respiration.
25. Recognition of common feeds and fodders.
26. Study of different dairy and cattle-yard registers.

Students shall visit various cattle farms and shall submit a report on that at the time of examination.

Agricultural Engineering

I Yr. B. Sc. Ag.

Theory :

1. *Agricultural Implements and Tillage :*

Study of the following indigenous and improved animal drawn implements—

Ploughs—country and mould board.

Bakkhar and Gantaka.

Harrows, planks and rollers.

Seeding implements—Bullock drawn seed drills and planters, dibblers, seeding attachments and other indigenous implements.

Cultivator and their attachments.

Threshers (Olpad and Naurang) and winnowing fans.

Bund farmers, levellers and chaff-cutters.

Repairs, adjustments, power requirements, cost of operation and efficiency of the above implements.

Tillage—Its objectives, types and timeliness.

2. *Materials of Construction :*

Wood, cast iron, chilled cast iron, wrought iron, steel, brass and white metal.

3. *Transmission of Power :*

Belts, belting and metal belt fastners.

Pulleys and shafts.

Gears.

Chains and sprockets.

Bearings.

Simple calculations regarding r.p.m. and sizes of pulleys and gears.

4. *Irrigation :*

Importance of irrigation.

Irrigation terminology—Cusec, acre-inch, flow and lift irrigation, hydraulic gradient, duty of water, water requirements of crops. Field capacity, wilting point and wilting range.

Indigenous and improved water lifts (pumps not covered in detail)—Discharge, power requirement and their efficiency.

Sources of irrigation water—Wells, tanks, lakes, ponds, canals.

Methods of irrigation and water requirement—

Surface irrigation.

Sub-surface irrigation.

Over-head (or sprinkling) irrigation.

Factors affecting water requirements of crops—time rate of application, depth of water required, crop needs, moisture needs of different soils. Limiting moisture condition.

Irrigation water—quality of water.

Losses and waste of irrigation water—Evaporation. Transpiration run off, percolation and seepage losses.

Losses in field ditches and structures.

Conveyance of irrigation water and irrigation structures—

Canals, Flumes, Tunnels, Drops, Chutes, Pipes, Inverted Siphons, Waste ways, Gates and valves, Sand gravel traps, Tapoons and Canvas dams.

5. *Drainage :*

Necessity of drainage, sources of excess water, harms caused by excessive moisture in soil. Formation of Alkali and Acid soils, methods of checking, development and their reclamation.

Surface and sub-surface drainage systems. Typical arrangements of drains under the two systems.

6. *Soil Conservation :*

Significance of soil erosion, Types of erosion. Factors affecting erosion and run-off-rainfall, landslope, so variable, vegetation and cultivation etc.

Methods of control of erosion — Use of vegetation. Forests, crop rotation, strip cropping, pastures etc., Countouring, Bunding, Terracing. Types of Terraces, maintenance of terraces, channels and outlets. Natural outlets, mechanical outlets, seeding and sodding outlets, meadow strips and protecting outlets.

Gully control : Types of gullies, check dams and temporary and semi-permanent, soil saving dams. Diversion channels. Winder erosion and its control.

Practical :

1. *Agricultural Implements :*

Practice in assembling and adjusting implements.

Practice in the use of implements.

2. *Workshop practice :*

Identification of tools used for the following operations in carpentry, black-smithy, tin-smithy and fitting :

(a) *Carpentry—*

Planing—preparing lumber for use :

Working face.

Working edge.

Working end.

Squaring to length.

breadth and thickness.

Use of chisels and gauges, Adze and Spoke share.

Sawing.

(b) *Black-smithy—*

Practice in the following :

Bending, Drawing, Upsetting, Twisting, Tempering, Annealing and Hardening.

(c) *Tin-smithy—*

Marking and layouts.

Use of solder iron, blow lamp, snips and fluxes.

(d) Fitting—

Chipping, Drilling, Hack-sawing, Marking and layout, Filing and grinding and cutting threads.

Knowledge of hard-ware materials such as :

Bolts and nuts, rivets, nails and screws, washers, wires, m.s. rods and flats, angle iron, sheets, springs and bearings.

Sharpening of cold chisels, wood chisels, plane bits and plough shares

Jobs—Khurpi blade, surveyors arrow, funnel, mug, mallet with handle, masons float, nut and stud.

Note :—1. Field Trips to see the irrigation systems and structures, soil conservation practices and drainage work.

2. Jobs and practical records will be submitted by the students at the time of practical examination.

Mathematics

Paper.

(This course will help agriculture students to understand the course in Statistics and Survey and day to-day practical work and charts etc. used on the farm).

Algebra :—Simple factors and simplification involving indices. Fractions. Arithmetical and Geometrical Progressions, simple ideas on permutation and combination. Quadratic equation. Binomial theorem and its application on extraction of roots.

Trigonometry :—Trigonometrical ratios; solution of right-angled triangle, working knowledge of logarithms. Height and distance.

Graphs : Variable and co-ordinates, statistical graphs and those governed by a natural law, simple graphs of linear algebraical expressions, uses of cartesian co-ordinates, distance between two points, area of simple plane figures.

Mensuration :—Area of regular and irregular fields and use of the formulae for the area and volume of cylinder, cone and sphere.

Agricultural Chemistry

Paper. Organic and Plant Chemistry :

(a) *Aromatic compounds* :—Coal-tar and its distillation, products

and the following aromatic compounds cited briefly :

- (1) Benzene and its halogen compounds, nitro-compounds, amino compounds and sulphonic acids.
- (2) Phenols, aromatic aldehydes, ketones, quinones, carboxylic acids.

(b) *Plant Chemistry*:—Composition of plants, plant food elements and their functions in plant growth.

Carbohydrates : Occurrence, constitution, chemistry of the following :—Glucose, fructose, galactose, sucrose, maltose, starch, celluloses, hemicelluloses, lignins, glycosides pectin, gum and mucilage.

Fats, oils and waxes—Their nature and properties, hydrogenation, rancidity and chemical constants.

Proteins—Amino acids, amides, amines and urea; their occurrence, nature and properties. Synthesis of carbohydrates, fats and proteins inside the plant body.

Enzymes, their occurrence, classification and characteristics. Mode of action of some important enzymes during germination, growth and ripening.

Occurrence, chemical nature and properties of vitamins.

Alkaloids and plant pigments, their occurrence, chemical nature and physiological function in the plant body.

Practical :

Volumetric :

- (1) Volumetric estimation of ferrous iron by KMnO_4 and $\text{K}_2\text{Cr}_2\text{O}_7$ methods.
- (2) Estimation of chloride as AgCl volumetrically.
- (3) Estimation of calcium by precipitation as oxalate and then KMnO_4 methods.
- (4) Iodine titration against thiosulphate.

Organic and Plant : Characteristic reactions of carbohydrates, fats oils and proteins.

Identification of the following organic compounds either alone or from a mixture of the two: Ethyl alcohol, glycerol, oxalic, citric and glucose, fructose, lactose, maltose, sucrose, starch and proteins.

Determination of melting and boiling points of organic substances.

Qualitative detection of nitrogen, sulphur, P and halogens alone or together in an organic compound.

Gravimetric:—Estimation of SO_4 , Fe, Ca and chloride.

Students shall visit Research Laboratories and shall submit a report at the time of examinations.

Agricultural Botany

Paper: 1. *Systematic Botany* :

General classification of the plant kingdom with distinguishing characters of the various classes.

A study of the distinguishing features of the following families:

Malvaceae (Gossypium-Hibiscus).

Leguminosae (Phaseolus) Arachis, cicer, cajanus.

Rosaceae (Pyrus, Fragaria, Rosa, Prunus).

Convolvulaceae (Ipomoea, cuscuta).

Solanaceae (*Solanum*, *Lycopersicon*, *Capsicum*, *Nicotiana*).

Rutaceae (Citrus).

Euphorbiaceae (Ricinus, Phyllanthus).

Umbelliferae (*Daucus, coriandrum, foeniculum*).

Pedaliaceae (Sesamum).

Gramineae (Triticum, Hordeum), (Oryza, Zea, Sorghum, Pennisetum).

Myrtaceae (Psidium).

Cucurbitaceae (Cucurbita, luffa, lagenaria).

Caricaceae (Carica).

Araceae (Colocasia).

2. Embryology :

Microsporogenesis, Megasporogenesis; Fertilisation and development of embryo; Parthenogenesis; Parthenocarphy and Polyembryony.

Nuclear divisions—mitosis and meiosis.

3. Plant Breeding :

1. Nature and scope of plant breeding.
2. Mode of reproduction in relation to breeding methods.
3. Selection—Mass selection, pure line selection and clonal selection.
4. Hybridisation.
5. Breeding for disease and pest resistance.

6. Plant introduction and acclimatization.
7. Seed production—Multiplication and distribution of pure seeds.
8. a general idea about the plant breeding work done in India on wheat, paddy, maize, sugarcane, cotton, potato and mustard.

4. *Physiology* :

Water relation : Absorption and movement of water in plants. Ascent of sap. Transpiration and guttation. Factors affecting transpiration. Stomatal and cuticular transpiration. Structure and function of stomata. Significance of transpiration.

Wilting coefficient; water requirement of crops and drought resistance in plants.

Plant Nutrition :—Elements absorbed by plants. Macro & Micro-elements. Water culture.

Photosynthesis :—Factors affecting photosynthesis. Role of leaf pigments. Products of photosynthesis. Law of limiting factors.

Respiration :—Aerobic and anaerobic respirations. Respiratory quotient. Factors affecting respiration.

Growth :—Factors affecting growth and development.

Growth hormones. Significance of carbon nitrogen ratio. Conception of photoperiodism and vernalisation.

Movement :—General idea of different types of movements brought about by external stimuli. Detailed study of geotropism, phototropism and seismonasty.

Germination :—Conditions favourable for germination, viability of seeds. Dormancy of seeds and methods of breaking it.

5. *Ecology* :

Its scope. Ecological factors affecting the distribution of vegetation: Plant societies and their adaptation. Plant succession. General characteristics of hydrophytes and xerophytes.

Practical :

1. Identification and description of common field and garden plants belonging to the families in the syllabus.
2. Anatomical studies of xerophytes, Hydrophytes and mesophytes. Use of double stain in anatomical preparation.

(Students be made acquainted with the techniques of smear preparation and permanent mounting).

3. Technique of emasculation in different crops. Practical acquaintance in methods of selection and hybridization.
4. Estimation of purity and germination capacity of seeds.
5. Simple physiology experiments to show in plants osmosis, root pressure, transpiration, respiration, photosynthesis growth and movement.
6. Determination of osmotic pressure by plasmolytic method.
7. Preparation of culture solution.
8. Microchemical tests for fats, proteins and starch.

Note—book containing records of practical shall be maintained by each student.

Students shall visit research laboratories and shall submit a report at the time of examination.

B. Sc. (Agriculture) Examination Part II

Agronomy II

Paper : *Principles of crop production, field and vegetable crops and climatology.*

- I. Principles of crop production : Factors of plant growth, good and bad seeds, seed germination and its requisites. Real value; seed multiplication and distribution. Crop adaptations, classification of field crops.
- II. Crop culture: Study of the following crops with their origin, soils, climate, method of seeding, manuring, irrigation, harvesting, yield and important varieties of Rajasthan.

Cereals : Wheat, Rice, Barley, Maize, Bajra and small millets.

Legumes : Arhar, Gram, Pea, Urad, Mung, Cowpea and Masoor.

Fodder crops : Lucerne, Berseem, Oats, Guar, Juar and Napier grass.

- III. Vegetable Farming : Study of the following crops with their soil and climate, adaptations, seed and seeding, fertilization, irrigation, harvesting, yield, marketing and important varieties in Rajasthan.

Cole-crops : Cauliflower, cabbage and knobkhol.

Root-crops : Carrots, Turneps and Radish.

Cucurbits : Cucumber, Tori, Tinda, Bottle gourd and Pumpkin.

Miscellaneous—Tomato, Brinjal and Lady's finger.

Bulb crops : Onion, garlic.

Spices—Chillies, turmeric, ginger, saunf, dhania and zira, seed raising, and nursery raising of vegetable crops.

IV. Climatology : Elements of climate, factors affecting the climate.

Pressure, temperature, wind, sun-shine, evaporation—methods of observing these and recording.

Wind currents, trade winds, cyclones and depressions. Atmospheric moisture, its measurement, formation of dew, frost, snow and hail. Clouds and their classification. Rain—its measurement and distribution in Rajasthan. Unfavourable and favourable weather conditions as related to their effects on crops and methods of minimising and preventing adverse effects.

Elementary knowledge of weather forecast. Meteorological instruments and their uses.

Practical :

(i) Production of Farm and vegetable crops mentioned in the theory course—recording of operations and their costs.

(ii) Practice of the following operations and estimating their costs—

(a) Seed-bed preparation with farm implements under field conditions.

(b) Sowing of seeds by hand, dibbling and drills.

(c) Interculture with hand tools and implements.

(d) Harvesting, and

(e) Threshing.

(iii) Preparation of F. Y. m. and compost. Preparation of fertilizer mixtures. Working out manurial schedules. Application of manures to crops. Practice of green manuring.

(iv) (a) Identification of seeds, plants and fertilizers.

(b) Identification of important rocks as per theory course.

(v) Estimation of soil moisture. Estimation of volume, weight, plasticity and sticky point.

(vi) Use of meteorological equipments—recording of temper—air and soil, rainfall, wind velocity, pressure, humidity etc. for a month by each student.

(vii) Practical records are to be maintained by the students which will be produced at the time of examination.

(viii) Students shall visit private and government farms during tours and a report to this should be submitted at the time of examination,

Animal Husbandry II

I. *Genetics :*

(The course should be taught with reference to both plants and animals).

- (a) Historical review : Work of Darwin, Deveries, Lamark and Weissman, leading to the discovery of Mendel's papers.
- (b) Cytological basis of Mendelism : History and development of cytogenetics. Linkage, linkage groups and gene theory. Fragmentation, trans-location, inversion, heteroploidy, autopolyploidy, cytogenetics of hybrid, chromosomes and sex. Cytoplasmic heredity.
- (c) Mendelism: Monohybrid, dihybrid, trihybrid and polyhybrid. Expression and interaction of factors giving the following ratios in the dihybrid.

9 : 3 : 3 : 1

1 : 2 : 2 : 4 : 1 : 2 : 1 : 2 : 1

3 : 6 : 1 : 2 : 3 : 1

9 : 3 : 4

9 : 6 : 1

12 : 3 : 1

9 : 7 : 13 : 3

15 : 1

Multiple scales, epistosis.

Multiple factor inheritance.

Linkage and crossing over.

Sex determination in plants and animals.

Sex linkage.

Mutation.

Hybrid Vigour.

Pure line selection.

Lethal factors.

II. *Animal Breeding :*

- (a) Origin of domestic animals. Domestication of animals, its consequences.
- (b) Genetic basis of variation. Genefrequency, quantitative inheritance, additive and non-additive.

- (c) Effects of heredity and environments.
- (d) Heritability of characters.
- (e) Selection-type, production, pedigree, relation-ship, progeny test.
- (f) Systems of breeding, inbreeding, out-breeding, random mating, measurement of inbreeding.
- (g) Relative importance of sire and dam. Sire indexes.
- (h) Bull Associations; cooperative breeding.
- (i) Anatomy and physiology of reproduction of cattle, sheep, goats and poultry, physiology of milk secretion.
- (j) Artificial insemination in cattle.
- (k) Key village scheme.

III. *Veterinary Science*

- (a) Infectious and contagious diseases—their cause and mode of dissemination.
- (b) General measures to be adopted in dealing the contagious diseases. Care of sick animals. Administration of medicines.
- (c) Description, symptoms, diagnosis and treatment of the following diseases of cattle : (i) Anthrax (ii) Foot and mouth disease (iii) Haemorrhagic Septicaemia (iv) Rinderpest (v) Black Quarter (vi) Cow-pox (vii) Tick fever (viii) Pneumonia (ix) Tuberculosis (x) Johnes disease (xi) Coccidiosis (xii) White scour and (xiii) Sterility.
- (d) First Aid, common ailments and their cure. Wounds, burns, sore feet, sprain, fracture, poisoning, choking, diarrhoea, dysentery, indigestion, constipation and tympanitis.
- (e) Simple obstetrics, common forms of abnormal parturition.
- (f) Treatment of diseases of the new born calf.
- (g) Biological products and their uses.
- (h) Causes and symptoms and treatment of common skin diseases and internal and external parasites.

Practical :

1. Dissection and practical acquaintance with the external and internal anatomy of cattle and goat.
2. Common internal and external parasites of cattle and methods of their eradication, disinfection of barns etc.

3. Familiarity with common medicines, their actions, dosage and handling, drenching :

(a) Disinfectants and antiseptics

(b) Laxatives and Purgatives

(c) Stimulants

(d) Vermicide

(e) Astringents

(f) Alternatives

(g) Anodynes

(h) Gargles

(i) Embrocation

(j) Sitagogus

(k) Demulcent

(l) Silogus

(m) Carminatives

(n) Ebolics

(o) Emetics

(p) Vermifuge

(q) Diuretics

(r) Expectorant

(s) Antimetics

(t) Fomentation

(u) Antidotes

(v) Detergent

(w) Styptics

4. Simple surgery and bandaging. Preparation of ointments, medicated oils, liniments and dispensing of prescriptions.

5. Care, management and clinical study of sick animals.

6. Care of mother before and after calving and handling of new born calves.

7. Diagnosis of ordinary and common ailments and diseases and their treatment, study of sprains of muscles, ligaments and tendons and their treatment.

8. Treatment of abscesses, wounds, tumors and fractures.

9. Familiarity with the appliances used for and the method of artificial insemination of dairy cattle.

10. Study of history sheets, pedigree records and herd registration forms.

11. Reports on study tours to be produced by the students at the time of examination.

Agricultural Economics & Statistics

Paper.

(a) Agricultural Economics :

Subject matter and the scope of the study, agricultural economics and industrial economics differentiated.

Production : The role of Agriculture in the national economy, Causes of low yield and remedies.

Problems of Land : Sub-division and fragmentation of holding, its extent, causes and remedies Concept of economic and optimum holding.

Agricultural Labour : Different types of Agricultural labour. Wages and methods of wage payments. Minimum wages; unemployment, its nature, extent and methods of utilising spare time by gainful employment suited to local conditions. Factors effecting efficiency of Agricultural labour.

Agricultural Finance : Importance of finance in agriculture. Types of Agriculture credit—short term, medium term and long term. Various agencies of finance and their relative importance. Rate of interest, defects and remedial measures. Rural indebtedness, its causes and extent. Debt legislation with special reference to Rajasthan.

Agricultural Marketing :—Types of market, marketing services and various agencies. The present system of Agricultural marketing, its defects and remedial measures. Cooperative marketing. Regulated markets. Role of Government in the improvement of Agricultural marketing with special reference to transport, grading and standardisation godown and ware houses.

Agricultural prices :—Factors determining Agricultural prices. Fluctuation and stabilization of Agricultural prices.

Co-operation :—Co-operation and its growth in India. Different types of co-operative societies, their functions and management with

special reference to Multi-purpose societies, co-operative unions, Central Banks and Provincial Banks.

Land Legislation :—Types of tenures. Recent Land legislation with special reference to Rajasthan. Land settlement and assessment. Systems of keeping land records.

Practical :

(b) *Statistics* :—

(There will be one practical of 30 marks; 4 hours).

The teaching of statistics shall be carried out as a practical project. Emphasis shall be on the ability to carry out the work rather than on definitions. The students will not be expected to know the mathematical derivation of various formulae.

Introduction, importance, characteristics and function of statistics.

Measurement of central tendency, mean mode, median, harmonic means, weighted mean, geometrical mean.

Standard deviation, variance, standard error, co-efficient of variation.

Skewness.

Normal curve, its properties and uses in statistics.

Student's "t" test.

χ^2 (chi square).

Analysis of variance.

Simple regression and correlation.

Price indices.

General principles of Randomised block and latin square.

Crop cutting experiments.

Reports on study tours to be submitted by the candidates at the time of examination.

Agricultural Engineering II

Theory :

I. Farm and Dairy Machinery :

(a) Study of the following tractor drawn implements and machines.

Mould Board and Disc ploughs.

Harrows and rollers.

Seed drills and planters.

Cultivators and their attachments.
Mowers, Grain binders and diggers,
Combine Harvester thresher.

(b) Study of the following Farm and Barn machinery :

Stationery threshers.

Silage cutters.

Feed grinders.

Winnowers.

Hitching, repairs, adjustments, common troubles, power requirements, cost of operation and efficiency of the implements and machines covered in I (a) and I (b).

(c) Principles of Refrigeration, cold storage and Pasteurization.
Brief study of Boilers.

2. Sources of farm Power ;—

Wind, water, animal power, internal combustion engines and electricity. Comparative study and selection for farms.

3. Internal Combustion Engines and Tractors :—

Working knowledge of engines and tractors.

4 stroke and 2 stroke engines, spark ignition and compression ignition engines and their comparative study. Brief study of the different systems of an engine and tractors.

Important adjustments in the various systems.

I. H. P., B. H. P. and efficiency of engines.

Selection of Tractors, Rating and cost of operation.

Maintenance and servicing of tractors and engines.

4. Farm and Dairy Buildings :—

Importance of buildings on farm. Investment in buildings. Selection of site for different buildings. Arrangement of buildings. Building material—strength, properties and adaptability, clay and clay—products. Wood, Metals, Mortar, Concrete.

Construction of silos, grain stores, barns, sheds, roads and dairy buildings. Construction of floors, walls and roofs, factor of safety. Depreciation and maintenance of buildings. Sewage disposal system, improved chulhas and ovens.

5. Irrigation :—

Study of pumps for irrigation.

Centrifugal pumps, their importance, selection and installations.
Selection of power for pumps.

Significance of piping heads.

Power required for pumping.

Common troubles and their remedies.

Wells—Percolation wells—lined and unlined, relative merits.
Construction and costs.

Masonry wells— Types, cost, improvement of wells
by boring and rock blasting.

Tube—wells— Principles, types and construction of
tube—wells Cost of construction.
Advantages of tube—wells. Measur-
ing the yields of tube—wells

Measuring devices for flowing water—weirs and notches.

6. Surveying :—

Chain Surveying.

Plane table surveying.

Prismatic compass surveying.

Farm and Dumpy levels—Differential and profile levelling.

Laying out irrigation and drainage systems on maps.

Practical :—

1. (a) Farm Machinery—Practical study of the following tractor
drawn implements and farm machine :—

Mould board and Disc ploughs.

Harrows.

Cultivators.

Seed drills and planters.

Mower, grain binder, diggers and combine harvester
thresher.

- (b) Internal Combustion Engines and Tractors —

Identification of important parts of engines and tractors.
Study of different systems in engines and tractors. Hitching
of implements behind tractors. Practice in tractor driving
and ploughing operations. Servicing the engines and tractors.

2. Drawing :

Drawing sketches of farm buildings including floor plans.

elevations and side views. Knowledge of reading blue-prints,

3. SURVEYING :

Chain Surveying. . .

Plane table surveying. . .

Prismatic compass surveying. . .

Farm level } Profile and differential levelling.
 Dumpy level }

Recording data in field books; plotting results and making maps or plans of fields. Determining areas.

Notes: 1. Field trips to see (i) the use of tractor and tractor drawn implements and machines, (ii) Building construction, (iii) Pumping installations. . .

2. Practical records will be submitted at the time of examination. . .

Agricultural Chemistry II

Paper :

Soils, fertilizers and manures:

Soils: Weathering of rocks and soil formation. Minerals, rocks and major soil types of India with special reference to Rajasthan. Composition of soil inorganic and organic. Effect of soil components i. e. water, air, temperature, nutrients and micro-organisms, upon plant growth.

Soil colloids: Inorganic and organic colloids and their properties. Base exchange phenomenon and buffer action. Soil reaction-PH, salinity, alkalinity and acidity. Quality of irrigation water and its effect on soil. Characteristics and reclamation of saline and alkali soils.

Soil bio—chemistry: Micro organisms of the soil, their distribution and relation to soil fertility: Soil organic matter, its origin and decomposition. C/N ratio. Humus, its formation, properties and relation to soil fertility. .

Nitrogen cycle: Ammonification, nitrification, denitrification. Symbiotic and non-symbiotic nitrogen fixation. Availability of major plant nutrients.

Soil-survey and classification. . .

Manures and Fertilizers: Manures, their classification, properties and effect on soil. . .

Organic—(1) Farm-yard manure, compost and green manure,

their decomposition and effect on soil. Activated sludge and pondrette.

- (2) Oil cakes, guano, bonemeal, dry blood and fish manures. Fertilizers--Chief nitrogenous, phosphatic and potassic and mixed fertilizers, their manufacture, sources, composition and mode of action in the soil.

Practical :

Mechanical analysis of soils by pipette method. Determination of PH of soil samples.

Chemical analysis of soils :

Method of taking surface samples of soil.

- (1) Determination of total, ammoniacal and nitrate nitrogen.
- (2) Determination of organic matter by loss on ignition and organic carbon methods.
- (3) Determination of Ca CO_3 .
- (4) Determination of moisture%.
- (5) Preparation of HCl extract and determination of acid insoluble matter, sesquioxides, iron, calcium K_2O and P_2O_5 in aliquots.
- (6) Qualitative and quantitative determination of total soluble salts, chlorides, sulphates, carbonates, bicarbonates and calcium in irrigation waters and water extract of the soils.

Analysis of fertilizers and manures :

- (1) Qualitative detection of manurial ingredients in fertilizer mixtures.
- (2) Estimation of total and available nitrogen in F. Y. M. and compost.
- (3) Determination of purity percentage of ammonium sulphate.
- (4) Determination of water and acid soluble P_2O_5 in bonemeal and super-phosphate.
- (5) Determination of total K_2O in potassic fertilizers.

Report on study tours to be submitted along with practical record at the time of examination.

Mycology and Entomology.

Theory : (a) Mycology and Bacteriology :

Mycology :

Importance and scope of Mycology.

General morphology, habitat, reproduction, dissemination and nutrition of fungi. Physiological specialization.

General technique such as isolation, purification, inoculation and infection of fungi. Preparation of plant tissue and synthetic media and their importance.

Classification of fungi; Phycomycetes, Ascomycetes, Basidiomycetes and Deuteromycetes. Taxonomic and morphological study of the following genera and their identification :

Pythium, Phytophthora; Cystopus, Peronospora, Sclerospora, Mucor, Saccharomyces, Taphrina, Penicillium, Aspergillus, Erysiphe, Phyllactinia, Peziza, Puccinia, Melampsora, Ustilago, Tilletia, Sphacelotheca, Tolyposporium, Agaricus, Alternaria, colletotrichum, Fusarium, Helminthosporium, Cercospora.

Bacteriology :

Position of bacteria in the plant kingdom. General morphology, habitat, reproduction, nutrition and reactions of bacteria to temperature, light, moisture, desiccation etc.

Symbiosis & Antibiosis.

Classification of bacteria.

Importance of the study of bacteria and their relation to various aspects of agriculture.

Acquaintance with current bacteriological techniques, such as cleaning of glass-ware, preparation of culture media, sterilization etc.

Practical :

Practical work shall be based on the theory course. Students should be made acquainted with the preparation of media, sterilization and isolation and purification of plant pathogens.

Note book containing records of the practical work shall be maintained by each student.

Report on study tour should be submitted at the time of examination.

*(b) Entomology & Parasitology :**Paper :*

1. Insect Anatomy—General account of the external insect morphology as seen in grass-hopper.

An elementary account of the exoskeleton, segmentation, antennae, mouthparts, legs, wings, wing venation and genitalia in general. General account of the internal anatomy of the grasshopper with special reference to the important systems: Digestive, circulatory, respiratory, nervous, reproductive and sense organs.

2. The insect life cycle—Post-embryonic development—metamorphosis, maturity, food habits and seasonal cycles.
3. Insect classification—Natural orders (29 order system vide Innus 1957) and a mention of the important families of agricultural importance therein.
4. Productive insects—An elementary knowledge of agriculture, sericulture and lociculture.

5. Animal Parasitology—General aspects of parasitology (mere outlines). Identification biology and economic importance of the common pathogenic species as given below:

Protozoa—*Trypanosoma* and *Babesia*.

Platyhelminthes—*Fasciola hepatica*.

Nemathelminthes—*Ascaris* and *Filaria*.

Arthropoda—*Sarcoptes*, *Boophilus* and *Rhipicephalus*.

Practical :

1. Dissection and temporary mounting of the two main types of mouthparts in insects—Mandibulate and Suctorial.
2. Simple dissection of the grasshopper for the study of the general internal organisation.
3. Identification of the different important types of mouthparts, legs and antennae of insects.
4. Determination of the important orders of insects of agricultural importance by visual examination.
5. Identification of the parasites mentioned in the para 5 of the theory course.
6. Methods of collection, pinning, setting, labelling and preservation of insect specimen. Collection of insects will be presented at the time of examination.
7. Laboratory records.
8. Report on study tour should be submitted at the time of examination.

B. Sc. (Ag.) Part III

Agronomy III ..

Crops, Cropping Scheme, Soil Management and Weed Control.

I. Study of the following field crops as grown in Rajasthan with special reference to the adaptation of soil and climate, manuring, distribution, varieties, method of production and storage etc.

Fibre—Sanai, Jute and Cotton.

Oilseeds—Ground nut, Caster, Linseed, Mustard and Sesamum.

Miscellaneous—Sugarcane, Potato and Tobacco.

II. Rotations and Cropping Schemes : Essentials of good rotations, underlying principles and essentials of a good cropping scheme. Factors affecting cropping scheme, their arrangement for intensive, extensive and specialised farming with special reference to Rajasthan dealing with the crops grown in the province. Role of legumes in crop rotation.

III. Mixed cropping, its principles, practices and scope in Rajasthan.

IV. Dry farming, principles, practices and its scope in Rajasthan.

V. *Soil Management* : Factors affecting soil fertility, maintenance of soil fertility. Improvement of unproductive land by scientific treatment; soil sickness including toxicity, acidity, alkalinity and salinity—their development, remediation and management of such soils. ..

Management of sandy, Loam and clay soils with special reference to Rajasthan.

VI. *Weed & Weed Control* : Distribution of common weeds in the locality, their injurious effects and sources of dissemination, loss to crop, yields and soil fertility, method of prevention and control, with special reference to the following weeds :

- | | |
|---------------------------------|-----------------|
| 1. <i>Aspodelus tenuifolius</i> | (Piazzi) |
| 2. <i>Cyperus rotendus</i> | (Motha) |
| 3. <i>Saccharum Spontaneum</i> | (Kaus) |
| 4. <i>Argemone mexicana</i> | (Satyanasi) |
| 5. <i>Convolvulus arvensis</i> | (Hiramkhuri) |
| 6. <i>Digera arvensis</i> | (Lalsua) |
| 7. <i>Euphorbia hirta</i> | (Dudhi) |
| 8. <i>Phyllanthus niruri</i> | (Hazerdna) |
| 9. <i>Trianthema Monogyna</i> | (Pathanchara) |
| 10. <i>Pluchea Lanceolata</i> | (Baisuri) |

11. *Alhagi comelorum* (Jawasa)
 12. *Chenopodium* sp. (Bothua & Khartia)

Use of important chemical herbicides as Weed Control.

Practical :

- i. Practical study of the crops mentioned in the paper in relation to methods of cultivation (improved and indigenous) yield and cost of production, storage and disposal of produce.
- ii. Placement of fertilizers to crops by scientific methods.
- iii. Working out manurial schedule for the crops mentioned in theory paper. Calculating the cost of individual items of cultivation operations.
- iv. Practical problems in soil management—Improvement of tenacious soils—timely operation, use of organic manures etc. Reclamation of alkali soils by scrapping, flooding and use of gypsum.
- v. Preparation of seed material for sowing, treatment of seed etc. Germination test, count, stand of the crop etc.
- vi. Detailed study of crop plants—Growth, development and grain straw ratio etc. Test weights.
- vii. Acquaintance with common weeds—Kharif, Rabi, Seasons. Crop-Weed population, their proportion, sequence of weeds in Maize, Cotton, Wheat, Sugarcane crops.
- viii. Critical identification of crop plants and their parts. Seeds fertilizers, soils, weeds etc.
- ix. Students shall visit holdings of cultivations and Government farms and their reports should be produced at the time of examination.
- x. Records shall be maintained and produced at the time of examination.

Dairying

Paper.

Milk :—Its definition and constituents, composition, factors affecting the composition of milk. Physical properties of milk, value of milk as human food, colostrum, its composition and utility.

Economic production of milk :—Factors affecting the cost of milk production in rural and urban areas.

Milk tests :—Acidity, sediment, methylene blue reduction, Resazurin, Phosphatase, alcohol.

Processing :—Filtration, clarification of milk, standardization, Homogenization, pasteurization, bottling, irradiation and fortification.

Transport and distribution of milk : Milk contract, problems of milk supply in our cities. Cooperative milk supply unions. Legal standard for milk. Adult ration of milk and its detection.

Types of micro-organisms :—Commonly found in milk. Growth of micro-organism in milk and cream. Bacterial standard for milks. Enzymes of milk.

Cream :—Its composition. Different methods of extracting cream from milk. Advantages of creaming by a separator over the gravity system. Factors affecting the percentage of fat in cream. Essentials for successful preparation.

Ripening of Cream :—Objects of ripening. Natural cream ripening and ripening with starters.

Neutralization—of cream for buttermaking.

Butter :—Its composition, preparation of butter from ripened cream, Sweet cream and whole milk. Factors influencing churning. Points of good butter. Judging of butter. Common defects of butter and their causes.

Ghee :—Manufacture of ghee from cream and butter. Comparison with the indigenous methods. Factors affecting the quality of ghee.

Cheese :—Manufacture of cheddar cheese. Indian milk cheese such as surti and its preparation.

Other milk products :—Manufacture and uses of *Khoa*, *Rabdi*, Channa, Dehi and Ice-Cream, condensed milk and milk powder.

Composition and uses of separated milk, buttermilk and whey.

Refrigeration—Objects, principles and methods of refrigeration commonly used in the dairy industry. Cold storage of milk and milk products. Utility of refrigeration under Indian conditions.

Minimum requirements of utensils and machinery for cattle yard and dairy. Their cost and upkeep.

Suitability of metals in dairy industry.

Cleaning and sterilization of dairy utensils and machinery.

Practical

1. Sampling of milk.
2. Cleaning of dairy utensils.
3. Preparation of churn, butterworker and other such appliances.
4. Test in milk and cream.

- (a) Fat percentage by Gerbei and Babcock's method.
 - (b) Specific Gravity by Lactometer.
 - (c) S. N. F. with help of formula after determining the fat% and specific gravity.
 - (d) Total solids with the help of Richmonds milk scale.
 - (e) Methytern Blue Reduction test.
 - (f) Resazuin test.
 - (g) Acidity of milk.
 - (h) Alcohol and phosphatase test.
5. Detection of adulteration of milk:
 - (a) Extraction of fat.
 - (b) Addition of water.
 - (c) Addition of separated milk or combination of any of these.
 6. Detection of stale or dirty milk.
 7. Testing of milk and cream.
 8. Standardization of milk.
 9. Humanizing of milk.
 10. Pastenzing of milk.
 11. Botteling of milk.
 12. Sealing of milk bottle and cans.
 13. Fitting and adjusting of cream separators.
 14. Separating of milk.
 15. Preparation of mother starter.
 16. Neutralization of cream.
 17. Natural cream ripening and ripening with the help of starter.
 18. Butter making.
 19. Judging of butter.
 20. Packing butter for the market.
 21. Estimation of water in the butter.
 22. Estimation of freezing point of milk.
 23. Casein making (a) Commercial Casein, (b) Reuvel Casein and (c) Lactic Casein.
 24. Ghee making from (a) Dahi, (b) Cream and (c) Butter.
 25. Preparation of Khona, Rabbri, Channa, Dahi and Ice Cream,

26. Preparation of Surti Cheese and Cheddar Cheese.
27. Study of dairy machinery—pasteinzer, cold storage, ice Cream freeze etc.
28. Study of dairy records.
29. Preparation of dairy schemes.
30. Study of a Cooperative Milk Union.
31. Report on study tour should be submitted by the candidates at the time of examination.

Farm Management and Extension

Paper :

(A) Farm Management :

Farm Management :—Its objects, scope and application to Indian conditions of farm economy.

Essentials in selecting a farm. Principles underlying successful management of farms maintained for research, demonstrations and profit.

Systems and types of farming : Large scale and small scale farming. General, specialised and mixed farming. Mechanised farming. Co-operative, joint and collective farming.

Farm Layout : Layout for different types of farms, layout of fields, roads, buildings, irrigation and drainage channels. Fencing and fencing costs.

Farm Labour : Pressure on land, problems of landless labour, training of unskilled labour, methods of increasing efficiency.

Farm Accounts : Farm book keeping and its scope. Type of farm book keeping. Single entry system, double entry system, Journal, Ledger, Cash book, Trial Balance, closing of account and profit and loss accounts.

Different registers kept on state farms.

Calculation of depreciation.

Capital Equipments : Nature of capital on small and large holdings and its improvement. Live stock, dead stock and working capital for specialised, mixed and commercial farms. Gross and net returns from such enterprises.

(B) Extension :

Extension Service : Meaning, scope and basic principles of extension. History of rural development activities with special reference to Gandhian constructive programme, Shriniketan, Gurgaon, Indian

Village Service, Marthandaun, Etawah, Community Projects and National Extension Service Blocks.

Extension Worker : Role and qualities of extension worker.

Extension Methods : Methods of approach, individual, group, community and mess.

Extension technique : Teaching, demonstration, audio-visual aids, group discussion.

Rural Society : Concept of community, Characteristics of rural life, organisation and structure of rural society. Rural psychology. Rural leadership.

Rural Institutions : Social institution, village panchayats, farmers organisations, land management committees.

Programme Buildings : Principles in programme building Determining the felt and unfelt needs.

Practical (Farm Management and Extension).

Group A. Farm Management.

Cost of cultivation, studies of various crops (at least one Rabi and Kharif) on the college farm and the cultivator's holding.

Working out of Profit and Loss Accounts and Trial Balance.

Working out the capital expenditure for various types of farms of various sizes.

Calculation of the various measures of Profit.

Farm income, Labour income, Family Labour Earnings, percentage return on capital, return above all cost.

Group B. Agricultural Extension.

(Emphasis shall be laid on the ability to carry out the work in the villages assigned to candidates. The students shall be required to visit rural development centres and keep a record of their observations).

Socio-economic survey of one village to acquaint the extension worker with the socio-economic problems of the village.

Laying out of demonstration plots to show the practical application of improved seeds, fertilizers and manures and cultural operations.

Practical demonstration of various types of Audio-Visual Aids.

Report on study tour should be submitted at the time of examination along with practical records.

Horticulture

Paper

1. Introduction :

[a] The present status and future scope of fruit & vegetable growing in India.

[b] The value of fruits and vegetables in human diet.

2. Nursery Practices :

[a] Raising of flowers, vegetables and fruits seedlings on nursery beds for transplanting.

[b] Growing of stocks for propagation.

[c] Lifting, packing and transporting of nursery plants.

3. Fruit Gardening :

[a] Selection of site and laying out of orchards.

[b] Preparatory tillage for growing fruits.

[c] Planting of fruit trees and planting systems.

[d] Manuring, irrigation and drainage of orchard.

[e] Principles of training and pruning of plants.

[f] Cultivation of orchards and intercropping.

[g] Propagation of plants.

[h] Problem of unfruitfulness and their treatments.

[i] Protection of fruit plants from adverse weather conditions.

[j] Rajuvenation :—Thinning, manuring, top-working, pruning etc.

[k] Harvesting and marketing of fruits.

[l] Principles of fruit preservation and fruit storage, preparation of products.

[m] Culture of the following fruits :—

Citrus, Mango, Guava, Pomegranate, Grape, Bannana, Papaya, Aonla, Ber, Peaches, Mulbery and Phalsa.

4. Vegetable Gardening :

[a] Types of vegetable gardening.

[b] Selection of site and layout.

[c] Manuring, irrigation, hoeing, earthing up and staking.

[d] Harvesting and preparation of produce for market.

[e] Raising and Storage of Seeds.

5. Ornamental Gardening :

- [a] Selection of site and layout including simple designs for private and public gardens.
- [b] General cultivation of winter and rainy season annuals.
- [c] Hedges— Classification, planning and uses.
- [d] Making of lawn and its maintenance.

Practical:

1. Raising of seedlings by seeds and cuttings on the nursery beds; their care.
2. Potting of plants and their care.
3. Practice in layering, grafting and budding.
4. Raising, lifting and packing of nursery plants.
5. Practical acquaintance with the common cultural operation done in orchards, vegetable growing and ornamental garden.
6. Pruning of trees.
7. Cultivation of winter and rainy season flowering annuals in pots and beds.
8. Identification of common hedge plants, ornamental trees, shrubs and climbers,
9. Preparation of squash Jam, Jelly, Marmalade and Sauce.

The students should go on tours to visit Nurseries and gardens. A record of practical work should be maintained.

B. Sc. (Ag.) 3rd Year.**Agricultural Chemistry III-50 marks.***Paper*

Feeds and feeding stuffs, animal nutrition and dairy chemistry. All the different parts mentioned as [a], [b] and [c] should be given equal weightage when question papers are set.

- (a) *Feeds and Feeding Stuffs* :—Major feeds and fodders of Rajasthan, their composition, energy value, digestibility and nutritive value.
- (b) *Animal Nutrition* :—Composition of the animal body and blood. Role of different nutrients, water and minerals in the animal body.

Digestion, absorption and metabolism of carbohydrates, fats, proteins and mineral matter. Role of hormones and vitamins. Gross, metabolizable and net energy; nutritive ratio, digestibility and feeding standards.

[c] Dairy Chemistry:—Constituents and composition of milk, their chemistry and properties.

Milk preservatives and their detection.

Adulteration of milk, butter and ghee.

Biochemical changes during the storage of milk, butter and ghee.

Milk products:—Cream, skin-milk, butter, buttermilk, cheese.

Whey, ghee, and dahi; their chemical composition and property—

Practical:—50 marks.

Feeding stuff :—Moisture, ash silica, crude protein, crude fibre, crude fat and nitrogen free extract.

Determination of calcium and P_2O_5 in ash of feeding stuffs.

Estimation of reducing and non-reducing sugars in jaggery and kane juice.

Dairy Chemistry :

Analysis of milk for lactose, proteins and total solids, acidity.

Analysis of butter for moisture, fat, salt & curd etc.

Determination of acid value, iodine number, saponification value, polenske and R. M. values in butter, ghee and oils.

The students shall have to submit reports on study tours along with the practical record at the time of examination.

Plane Protection

Paper (a) : Plant Pathology :

Importance and scope of plant Pathology.

Classification of plant diseases.

Effect of plant pathogens on the host.

Methods of infection.

Susceptibility and resistance.

Environment and diseases.

General principles of plant protection.

(Methods of plant disease control).

Fungicides in general use; their preparation, application and effects on the plant.

Symptoms, etiology and control of the following diseases caused by fungi:—

“Damping off” of seedlings and stem rot of papaya (Pythium).

Late blight of potato (Phytophthora); white rust of crucifers

(Cystophus); green ear of bajra (Sclerospora); downy mildew of peas (Peronospora); powdery mildew of peas (Erysiphe); leaf spot of turmeric (Taphrina); smut of wheat (Ustilago), smut of jowar (Sphaecoheca); smut of bajra (Tolyposporium); rust of wheat (Puccinia); rust of linseed (Melampsora); early blight of potatoes (Alseinate); red rot of sugarcane (Colletotrichum); wilt of pigeon peas (Fusarium); early blight of potato (Alternaria).

Bacteria and plant diseases; different types of bacterial diseases together with their methods of control. General discussion on immunity, toxin & antibodies.

Symptom & control of citrus canker.

Virology: A general account of viruses; their relation to plant diseases; symptoms, transmission and control of plant virus diseases.

Virus diseases of potato (Mosaic & leaf roll), sugarcane (Mosaic) and tobacco (Mosaic).

Angiospermic Parasites: Cuscuta,

Loranthus & orobanche:

Typical non-parasitic diseases:—

Their symptoms, causes and control.

Practical:

Practical work shall be based on the theory course. It will include:—

- (1) Examination and identification of the parasites.
- (2) Preparation and application of common fungicides.
- (3) Methods of seed dressing.
- (4) Collection and preservation of diseases specimens.

Note book containing records of the practical work shall be maintained by each student.

Students shall go on study tour to various stations and shall submit a report to this effect at the time of examination.

Paper (b): Animal Pests and Plant Protection Equipment:

1. Introduction:—Different ways in which insects are harmful to agriculture. Kinds of insect damage and simple methods of estimating damage or intensity of attack.

2. General control considerations:—Natural Vs. Artificial Control.
Control Methods :

- (a) Chemical—Insecticide, their classification, qualities and formulations. Hazards involved in the use of modern insecticides.
- (b) Physical and Mechanical.
- (c) Cultural.
- (d) Biological
- (e) Quarantine.

Problems in devising control measures : Cost, the weakest link, community projects, extension etc.

3. Systematic position (Order, Family and Scientific name), food plants, damage, life history and control of the following pests :

General—Desert Locust, Termites and grass-hopper (*Hieroglyphus* sp. and *crpotogomus* Sp.).

Crop pests—*Leptocoris* Varicornis, Chilo, Zonellus, Amsacta sp., Scispophaga nivella, chilotraea, infuscatellus, Emmalocera depressella, Pyrrilla perpusilla, Alensolcper barodensis, Sylepta derogata, Earias spp., Dysderous cingulatis Platedra gosaypiella. Agrotis Spp., Heliothis obsoleta.

Vegetable pests—*Gnorimoschema operculella*, Aulacophora spp., Dacus cucumbitae, Cylas formicarius, Athalia proxima, Bagrada cruciferarum, Siphoconyne, indobrassical.

Fruit tree pests—*Idiocerus* sp., Drosicha mangital, Verachola isocrates, Papilio demoleus,

Stored grain pests—*Sitophilus oryzae*, Rhizoperthia Doumica, Trogoderma Grannaria, Tribolium, Castarcium, Sitotroga, Cerealella; Bruchus, Chineses,

Non insect pests—Field rats, Nematode parasites of wheat and brinjal.

4. Selection, manipulation and care of the different types of Plant Protection equipment used in India.

Practical :

1. Observation and meaning of common insect pests by students.
2. Detection of pest damage or infestation. Identification of pests included in the theory course.
3. Simple fumigation methods.

4. Calculation of insecticidal dosages from given formulations. Preparation and use of pesticides.
5. Handling of common Plant Protection Equipments used in pest control.
6. Each candidate must submit a collection of insects chiefly of the pests included in the course and record book containing an account of practical work done during the year.

Candidates will be examined orally and practically in the work recorded in their note books and insect collections.

7. Students shall visit research stations during study tour and shall submit a report at the time of examination.

APPENDIX K

(*Ref. Fac. of Sc. Res. No. 17 of Nov. 6, 1958*)

Minutes of a meeting of the Committee appointed by the Syndicate *vide* its Resolution No. 14 of January 28, 1958, held on the 9th February, 1958 at 11.00 a. m. at the University Office, Jaipur.

Present:

1. Dr. S. M. Mitra
2. Principal C. B. Gupta
3. Principal K. K. Chaturvedi
4. Dr. M. L. Sharma

(*Convener*)

It was unanimously *resolved* that the recurring and non-recurring grants for library books for each subject in affiliated colleges be revised as given in *appendix I*.

A note by the Dean of the Faculty of Commerce is also attached (*Vide Appendix II*) explaining the necessity of what may appear to be an abnormal enhancement in the grant for commerce books.

M. L. Sharma
Convener.

Appendix 1

Minimum Recurring and Non-recurring grants for Library books for each subject in affiliated colleges.

Subject of Study.	Degree Colleges		Post-Graduate Colleges	
	Recurring P. A.	Non-Recurring.	Recurring P. A.	Non-Recurring.
	Rs.	Rs.	Rs.	Rs.
1. English.	400/-	1,000/-	600/-	1,200/-
2. Philosophy.	300/-	600/-	600/-	1,200/-
3. History.	300/-	600/-	600/-	1,200/-
4. Sociology.	300/-	600/-	600/-	3,000/-
5. (a) Economics. (b) Public Administration.	300/-	600/-	600/-	1,200/-
6. Urdu/Persian/Arabic.	110/- each	200/-	225/- each	300/-
7. Hindi/Sanskrit.	300/- each	600/- each	500/-	1,000/-
8. Mathematics.	350/-	700/-	750/-	2,000/-
9. Chemistry & Physics.	350/- each	700/-	750/-	2,000/-
10. Zoology & Botany.	300/-	600/-	750/-	2,000/-
11. Political Science.	300/-	600/-	600/-	1,200/-
12. Commerce.	1,000/-	5,000/-	1,000/-	5,000/-
13. Geography.	250/-	600/-	600/-	5,000/-
14. Drawing & Painting.	200/-	1,000/-	—	—
15. General Periodicals.	200/-			
16. Miscellaneous.	250/-			
17. Books for reference.	200/-	1,000/-	3,000/-	2,000/-
18. Binding.	100/-		200/-	

Appendix II

The following are the subjects, compulsory and optional, which are prescribed for the B. Com. Examination :

1. Languages
2. Accountancy : Accountancy, Auditing, Income-Tax and Cost Accounting
3. Commercial Law
4. Industrial Organisation
5. Statistics
6. Economics
7. Economic Development
8. Economic and Commercial Geography
9. Banking
10. Actuarial Mathematics
11. Trade and Transport
12. Insurance
13. Rural Economics and Co-operation
14. Secretarial Practice

The amount of Rs. 1,000/- for recurring expenditure on books on Commerce for the Library of an affiliated college, preparing for B.Com. Examination of the University, as recommended by the Committee, seems to be reasonable rather low in view of the large number of subjects and students offering Commerce and also even if these subjects were equated with subjects like Persian and Arabic which have been allotted a sum of Rs. 110/- each where the number of students offering them can be safely counted on fingers.

It may further be pointed out that a Committee appointed by the Faculty of Commerce for the purpose of recommending non-recurring grants for providing minimum equipment and requirements also has recommended a recurring grant of Rs. 1,000/- for the books on Commerce subjects for the libraries of the affiliated colleges preparing for B. Com. Examination.

C. B. Gupta
Dean,
Faculty of Commerce.

Minutes of the meeting of the Committee appointed by the Vice-Chancellor, consisting of the Dean of the Faculty of Commerce and the three Conveners of the three Boards of Studies in Commerce, to work out the nature and details of the Practical Training to be undergone by the successful M. Com. (Final) students, held on Friday, the 8th August, 1958 at 1.00 p. m. at the University office, Jaipur.

PRESENT:

1. Shri R. S. Yajnik
2. Shri S. D. Pande
3. Shri B. D. Bhargava
4. Shri C. B. Gupta (Convener)

The Committee considered the minutes of the meeting which was appointed by the Faculty of Commerce to prepare a detailed scheme of practical training for the M. Com. students, printed at page 142 of the University Minutes Vol. XVIII and also a letter of the Dean, No. 364/57-58 dated the 19. 9. 57 and it worked out the following details of the practical training :-

1. The training may commence soon after all the theory papers at the M. Com. (Final) Examinations are taken up and it shall relate to any of the papers for M. Com. Examination offered by a student.

2. During the period of training a student shall keep a diary of work done by him and at the end of the period of three months' training this diary together with a Certificate from the Head of the business firm or the Government office shall be submitted by the student to the Head of the Department of Commerce in his college. The remarks of the Head of the Department will be forwarded to the Registrar through the Principal of the college. If on the basis of this evidence the Syndicate is satisfied that the student has undergone a satisfactory course of practical training, he may be awarded the degree of M. Com.

3. No marks will be assigned for the practical training or for the diary kept by the student during the training and there will be no viva voce examination after the completion of the practical training.

4. If a student fails in the theory papers but completes his practical training of three months he will not be required to undergo the practical training again.

5. The Heads of Department of Commerce in the affiliated colleges shall prepare a list of suitable firms and offices for the purpose of practical training and secure their permission for imparting practical training to the students.

6. The following categories of business firms and offices were considered as suitable for practical training :

1. Joint-Stock Companies.
2. Scheduled Banks.
3. State Enterprises.
4. Government Offices
5. Registered Firms with a capital of Rs. 50,000 or more with a standing of 10 years.
6. Joint-Hindu-Family Firms and Sole-Proprietorship Firms with a capital of Rs. 50,000/- or more with a standing of 10 years.
7. Registered Co-operative Societies.

A firm or office selected for training should have adequate facilities for training by its nature and scope of work which should have relation to one of the papers offered by a student in M. Com.

7. The following form of the Certificate to be given by the Head of the Department of Commerce was adopted :

'I certify that (Name of the student with his Roll Number) has completed three months' practical training at (Name of the

Firm or Government Office) and his record of work and training as testified by the (Official designation of the representative of the firm, bank, office, etc.) is satisfactory.'

Countersignature of the
Principal of the College
(Seal of the College)

Signature of the Head of the
Department of Commerce.

The Dean also placed before the Committee a letter of the University, No. 32763, dated the 18th July, 1958 in connection with the practical training of the M. Com. students with certain queries and issues. Almost all the queries and issues are covered by the above details of the practical training. However, with reference to the query No. 5 of the letter, the Committee was of the opinion that the students who appeared at the M.Com. Examination of 1958 should not raise the plea that they were not informed of the implementation of the practical training with effect from the examination of 1958 as this information had clearly been mentioned in the University syllabus for the Final Examination of 1958. However this information regarding the practical training has been left out, perhaps inadvertently, in the syllabi of 1959 and 1960.

C. B. Gupta
Convener.

MINUTES OF A MEETING OF THE FACULTY OF
COMMERCE, HELD ON FRIDAY, THE 7TH
NOVEMBER, 1958 AT 1.00 P. M.,
AT THE UNIVERSITY
OFFICE, JAIPUR.

PRESENT :

1. Shri Chandra Bhan Gupta, Dean.
(*In the Chair*)

- | | |
|--------------------------------|---------------------------------------|
| 2. Shri M. V. Mathur. | 3. Shri H. C. Rara. |
| 4. Shri R. S. Dangayach. | 5. Shri H. M. Mathur. |
| 6. Shri S. K. Porwal. | 7. Dr. Mali Ram. |
| 8. Shri B. B. Kaushik. | 9. Shri Shankar Sahai Saxena. |
| 10. Shri Harish Chandra Gupta. | 11. Dr. Dool Singh. |
| 12. Shri L. N. Maheshwari. | 13. Shri G. P. Sayal. |
| 14. Shri N. M. Kothari. | 15. Shri H. C. Jain. |
| 16. Shri B. D. Bhargava. | 17. Shri J. S. Saxena. |
| 18. Shri C. S. Kulshreshtha. | 19. Shri K. C. Mehta. |
| 20. Dr. R. G. Sarien. | 21. Shri J. P. Bhatnagar. |
| 22. Shri R. L. Sharma. | 23. Shri Brij Mohan Lal
Bhatnagar. |
| 24. Shri H. L. Jan. | 25. Shri B. K. Tandon. |
| 26. Shri P. S. Sood. | 27. Dr. S. S. Kulshreshtha. |
| 28. Shri M. N. Mathur. | 29. Shri A. N. Agarwala. |
| 30. Dr. D. L. Gupta. | 31. Shri B. L. Mathur. |
| 32. Shri K. K. Mehrishi. | 33. Shri D. P. Gupta. |
| 34. Shri S. D. Pande. | 35. Shri G. P. Bhargava. |
| 36. Shri B. S. Srivastava. | 37. Shri M. L. Mathur. |
| 38. Shri M. L. Sahal. | 39. Shri H. S. Saxena. |
| 40. Shri Jai Krishna Vyas. | 41. Shri R. D. Saxena. |
| 42. Shri Mohan Lal Sharma. | 43. Shri C. B. Mamoria. |
| 44. Shri S. L. Doshi. | 45. Shri C. D. Avasthy. |
| 46. Shri R. K. Agarwal. | |

1. The minutes of the meeting of the Faculty of Commerce, held on the 17th December, 1957, were confirmed.

2. Shri D. P. Gupta, Professor of Commerce College, Jaipur, was elected as a member of the Board of Studies in Commerce (Allied) for the residue of the term of Shri O. P. Bhargava (ceased).

3. With reference to the Syndicate Resolution No. 18, dated the 28th January, 1958, the Faculty considered the question of awarding divisions to candidates who pass their B.Com. (Final) Examination after passing the B. Com. (Previous) Supplementary Examination.

In this connection it was reported to the Faculty that :

(I) The Syndicate vide its resolution No. 39, dated the 24th August, 1958, had resolved that such candidates be awarded a division but for this purpose the average marks of the main examination in the subjects in which they were declared eligible for a supplementary examination and those of the Supplementary Examination in the same subjects in which they passed, will be taken into account at the time of determining the grand total of the previous and final examinations.

(II) In the light of the above resolution of the Syndicate, divisions of the candidates were worked out by Office at the B. Com. (Final) Examination and in so doing 42 out of 112 secured less than the minimum pass marks, namely, 35% in the subject concerned. Besides, two candidates (Roll Nos. 73 and 222) who had already been declared to have passed the B. Com. (Final) Examination of 1957, secured less than the minimum marks also in the total aggregate required for a pass at the B. Com. (Previous) Examination. Since they had already been declared to have passed the final examination they were awarded III division under orders of the Vice-Chancellor.

was, therefore, felt that the above procedure for awarding divisions in such cases was defective which needed re-examination and, therefore, the Syndicate referred the matter to the Faculty of Commerce for consideration vide its resolution No. 18 of the 28th January, 1958.

Resolved to recommend by majority that a candidate who passes at the B. Com. (Previous) Examination as a result of Supplementary Examination be not awarded any division at the B. Com. (Final) Examination.

4. With reference to its resolution No. 4, dated the 17th December, 1957, regarding permitting a candidate to offer Thesis carrying 100 marks, in lieu of one paper at the M. Com. (Final) Examination, the Faculty considered the views of the Boards of Studies in Commerce (Practice and Allied) as contained in their Resolution Nos. 6 of the 7th and 8th May, 1958.

In this connection it also considered the recommendation of the Board of Studies in Commerce (Theory) as contained in its resolution No. 6, dated the 8th May, 1958, under which it was suggested that a candidate, who obtained 55% in M. Com. (Previous) be permitted to take a thesis in lieu of any one of the second, third or fourth paper of the Compulsory Group.

Resolved to recommend that a candidate who obtains 55% marks at the M. Com. (Previous) Examination be permitted to offer Thesis in lieu of the Compulsory Paper IV, Secretarial Practice.

5. With reference to the resolution No. 43 of the Syndicate, passed at its meeting, held on the 12th August, 1958, the Faculty considered the question of distribution of subjects among the three Heads of Departments in colleges affiliated in the Faculty of Commerce in the light of the new Ordinance 66 A. In this connection it also considered the recommendation of the Board of Studies in Commerce (Theory) as contained in its resolution No. 10, dated the 8th and 9th May, 1958.

Resolved to recommend that :

(1) The three Boards of Studies under the Faculty of Commerce be named as given in the following amended Ordinance 54 :

O. 54. There shall be three Boards of Studies in the Faculty :

(1) Board of Studies in Commerce (Accountancy & Statistics).

(2) Board of Studies in Commerce (Business Administration).

(3) Board of Studies in Commerce (Applied Economics & Finance).

(1) Ordinance 55 be amended so as to read as follows :—

O. 55. The distribution of subjects among the three Boards shall be as follows :—

(1) Board of Studies in Commerce (Accountancy & Statistics) :

Pre-University : 1. Book-keeping.

2. Mathematics.

B.Com. (Previous) : 1. Commerce Practice Paper I :

Accountancy.

B.Com. (Final) : 1. Commerce Practice Paper II :

Statistics.

2. Advanced Accountancy.

3. Actuarial Mathematics.

Three-Year Degree Course :

1. Accounts.

2. Elective subjects :

(a) Actuarial Science.

(b) Mathematics.

(c) Advanced Business Statistics.

M. Com. : 1. Accountancy Group.

2. Actuarial Science Group.

(2) Board of Studies in Commerce (Business Administration) :

Pre-University : 1. General English.

2. General Hindi.

3. General Education.

4. Business Methods.

5. Shorthand.

6. Typing.

B.Com (Previous) : 1. English Text & Rapid Reading.

2. Commerce Practice

Paper II : Commercial Law.

3. Essay (Hindi).

B.Com. (Final) : 1. Commerce Practice Paper I : Commercial & Industrial Organisation.

2. Secretarial Practice.

3. Insurance.

4. Essay (English).

Three-Year Degree Course :

1. Hindi.

2. English.

3. General Education.

4. Business Administration Group.

5. Essay (English).

6. Elective subjects :

(a) Insurance.

(b) Steno-typing.

(c) Labour Problems and Personnel
Management.

M. Com.

1. Compulsory Group.

2. Business Administration Group.

3. Insurance Group.

(3) Board of Studies in Commerce (Applied Economics & Finance):

Pre-University : 1. Elements of Economics.

2. Commercial Geography.

- B.Com. (Previous) : 1. Commerce Theory Paper I :
Principles of Economics.
Commerce Theory Paper II :
Banking & Currency.

- B.Com. (Final) : 1. Commerce Theory Paper I :
Economic Development.
2. Commerce Theory Paper II :
Economic & Commercial Geography.
3. Rural Economics and Co-operation.
4. Trade and Transport.
5. Advanced Banking.

Three-Year Degree Course :

1. Economic Group.
2. Elective subjects.
 - (a) Advanced Banking
 - (b) Trade & Transport.
 - (c) Public Economics.

- M. Com. : 1. Banking Group.
2. Transport Group.

(III) The new Ordinance 66 A be amended so as to read as follows :—

O. 66. A.

Every degree and post-graduate college teaching subjects of study included in the Faculty of Commerce shall provide three Heads of Departments, one in Accountancy and Statistics, one in Business Administration and one in Applied Economics and Finance in the scale of pay for the heads of degree or post-graduate departments as the case may be.

(IV) The distribution of subjects amongst the three Heads of Department be done on the lines of the distribution of subjects among the three Boards of Studies in Commerce, that is to say—

the subjects assigned to the (a) Board of Studies in Commerce (Accountancy and Statistics), (b) Board of Studies in Commerce (Business Administration) and (c) Board of Studies in Commerce (Applied Economics and Finance) be placed in the charge of the Heads of Accountancy and Statistics, Business Administration and Applied Economics and Finance respectively.

6. After noting (as reported by the Registrar) the various steps taken by the University leading to the introduction of the Three-Year Degree Course, the Faculty considered the recommendations of the Three Boards of Studies in Commerce with regard to the courses of study and text-books for the Post-graduate and Degree Examinations of 1960 and 1961; the First Year Examination of 1960, the Second Year Examination of 1960 and 61, the Final Year Examination of 1961 and 1962 (Three-Year Degree Course Scheme) and the Pre-University Examination of 1960 (in accordance with the schemes of examinations, duly approved by the Academic Council and the Syndicate), made at their meetings held in May/September, 1958.

In this connection the Faculty also noted the action taken by the Vice-Chancellor (under authority given by the Syndicate vide its resolution No. 12, dated the 27th February, 1958) in allowing the introduction of the Three-Year Degree Course with effect from July, 1958 in 13 affiliated Government colleges on the persistent request of the State Government in view of the interest of the candidates who passed the Higher Secondary Examination of the Board of Secondary Education, Rajasthan, 1958.

Resolved to recommend that :

- (i) The recommendations of the Board of Studies in Commerce (Practice) (*vide Appendix A*) as contained in its resolution Nos. 1, 2, 7 and 8 passed at its meetings held on May 6 and 7, 1958, be approved with the following modifications :—

That in the syllabus of Accounts Paper III (Taxation) for the Final year of the Three-Year Degree Course, 1951-52, shown in Appendix (IV)

of the minutes of the Board, the following be added after 'Sales Tax'.

"(Rajasthan and Central Governments)".

(ii) The recommendations of the Board of Studies in Commerce (Theory) (*vide Appendices B and C*) as contained in its resolution Nos. 1, 2, 7 and 8, passed at its meetings held on 8th and 9th May, 1958 and the courses contained in the minutes of the Board of Studies' meeting held on the 8th September, 1958 be approved with the following modifications :—

(a) The note viz. 'candidates are not expected to possess a detailed knowledge of the subject' given at the very outset of the syllabus for Paper II, Banking and Currency, for the Final Examination of the Three-Year Degree Course be deleted,

(b) The Dean of the Faculty be authorised to declare in consultation with the Convener of the Board of Studies in Commerce (Theory), the three major industries, a detailed study of which is to be made by the students who will be appearing for the M. Com. Examination of 1960, offering Paper IV, Major Industries of India, from the Business Administration Group.

(iii) The recommendations made by the Board of Studies in Commerce (Allied) (*vide Appendix D*) as contained in its resolutions Nos. 1 and 2, passed at its meetings held on 7th and 8th May, 1958, be approved with the note that the Dean be authorised to get a clarification from the Convener of the Board of Studies in the matter of discrepancy with regard to speeds in Type-writing and Shorthand for the Pre-University Examination and to include the clarification in the minutes of the Faculty.

Consequently clarification in the matter was sought from the Convener of the Board of Studies in

Commerce (Allied) and he wrote in his letter, dated the 28th November, 1958 that there were typing mistakes as regards the speeds in Typing and Shorthand both for English and Hindi, in the minutes of the meeting of the Board of Studies in Commerce (Allied) for the Pre-University Examination and the Board had recommended as follows :—

Shorthand (English) 60 words per minute.

Shorthand (Hindi) 25 words per minute.

Typing (English) 25 words per minute.

Typing (Hindi) 20 words per minute.

(iv) The recommendations of the General Education Committee (*vide Appendices E and F*) as contained in its minutes of the meetings held on 5th and 6th May and 8th September, 1958, be approved.

(v) The Faculty felt that in the present scheme of examinations, as was accepted by the Syndicate under emergency on an ad-hoc basis on the recommendations of the Three-Year Degree Course Committee (Commerce), certain changes were required to be made. It, therefore, recommended that the following revised scheme of examination be followed with effect from the Three-Year Degree Course to be introduced with effect from July, 1959, that is to say, for the First Year Examination of 1960, for the Second Year Examination of 1961 and the Final Year Examination of 1962.

First Year Examination, 1960

Minimum pass marks in each paper shall be 35 percent. Division will be awarded on the aggregate of marks obtained by a candidate at the First Year, Second Year and the Final Year Examinations of the Three-Year Degree Course.

Hindi :

	Maximum Marks.	Minimum Pass Marks.	Time.
One Paper— Text and Rapid Reading.	100	36	3 Hours.

English :

One Paper—

Section A : Rapid Reading 50	36	3 Hours.
Section B : General English 50		

General English :

1. Use of Tense Sequences and Direct & Indirect Narrations 10	18	3 Hours.
2. Translation from Hindi to English 20		
3. Simple Precs 20		
<hr/> 0		

General Education :

One Paper—	100	36	3 Hours
(a) Natural Sciences.			
(b) Social Sciences.			

Accounts :

One Paper—	100	35	3 Hours.
Principles of Accounts.			

Economics :

One Paper—	100	36	3 Hours.
Economic & Commercial Geography of India.			

Business Administration :

One Paper—	100	36	3 Hours.
Principles of Business Administration.			

Second Year Examination, 1961

There will be six papers of which five shall be compulsory and one elective.

*Compulsory Papers :**English :*

	Maximum Marks.	Minimum Pass Marks.	Time.
One Paper—			3 Hours.
Section A : Text	50 Marks.	} 36	
Section B : General English	50 Marks.		

General English :

	Maximum Marks.	Minimum Pass Marks.	Time.
1. Unseen Piece.	20	} 18	3 Hours
2. Short general essay of not more than 3 pages, one essay at least one descriptive, one narrative and one reflective. It should be on social and cultural interest.	20		
4. Corrections of sentences. At least 10 sentences be given out of which students will be asked to correct five.	10		
	<u>50 Marks.</u>		

General Education :

	Maximum Marks.	Minimum Pass Marks.	Time.
One Paper—	100	36	3 Hours.
(a) Natural Sciences.			
(b) Social Sciences.			

Business Administration :

	Maximum Marks.	Minimum Pass Marks.	Time.
One Paper— Legal Aspects of Business.	100	36	3 Hours.

Economics :

One Paper— Principles of Economics.	100	36	3 Hours.
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Accounts :

One Paper— Statistics.	100	36	3 Hours.
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Elective Subject :

One Paper—	100	36	3 Hours.
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Final Year Examination, 1962

There will be seven papers out of which six shall be compulsory and one elective.

Essay :

	Maximum Marks.	Minimum Pass Marks.	Time.
One Paper— (English) on economic & commercial topics.	100	36	3Hours.

Business Administration :

One Paper— Secretarial Practice.	100	36	3 Hours.
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Accounts : 2 Papers

Paper I—Taxation	100	} 72	3 Hours each.
Paper II—Cost Account- ing & Auditing	100		

Economics : 2 Papers

Paper I—Modern Economic Development of India & United Kingdom	100	} 72 3 Hours each.
Paper II—Banking & Currency of India	100	

Elective subject :

One Paper —	100	36	3 Hours.
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7. With reference to Syndicate Resolution No. 3, dated the 12th August, 1958, the Faculty considered the recommendations of the Committee, appointed by the Syndicate vide its resolution No. 14, dated the 28th January, 1958, in connection with the observation made by the Senate at its meeting held on the 8th December, 1957 to the effect that the question of suitably raising the amount of grants recurring and non-recurring, to be spent on the purchase of books by the colleges, affiliated in different subjects for post-graduate examinations, be taken up for consideration as the present grants were much too meagre to suitably equip the libraries of the college.

(Vide Appendix G)

Resolved to recommend that the recommendation made by the Committee be approved with the following modifications :—

The minimum recurring and non recurring grants for library books in Commerce for affiliated colleges be prescribed as follows :—

Degree Colleges : Recurring grant per annum Rs. 1,200/- (Rs. 400 for each of the three departments of Commerce)
Non-recurring grant Rs. 5,100/- (Rs. 1,700/- for each of the three departments of Commerce).

Post-graduate College :

Recurring grant per annum Rs. 1,500/- (Rs.

600/- for each of the three departments of Commerce)

Non-recurring grant Rs. 6,000/- (Rs. 2,000/ for each of the three departments of Commerce).

Chandra Bhan Gupta

Dean.

APPENDIX A

(Ref. Fac. of Commerce Res. Nos. 4 & 6 (i) of November 7, 1958)

Minutes of a meeting of the Board of Studies in Commerce (Practice) held on 6th May 1958, at 12.30 P.M. and 8 A.M. respectively at the University Office, Jaipur.

Present:

1. Shri F. C. Gupta
2. Shri R. K. Agarwal
3. Shri M. L. Sharma
4. Shri Krishna Datta
5. Shri R. S. Yajnik
6. Shri S. D. Pande (Convener)

1. The Board recommended courses of study in Commerce (Practice) for the following examinations (*Vide appendices I, II, III, & IV*) :-

- (a) Pre-University Course Examination
- (b) 1st year examination of the three-year degree course, 1959 and 1960.
- (c) 2nd year examination of the three-year degree course, 1960 and 1961.
- (d) Final year examination of the three-year degree course, 1961 and 1962.

2. (a) *Resolved to recommend that the courses of study for the B. Com. (Previous) Examination of 1960 and for the B. Com. (Final) Examination of 1961 be the same as for the examinations of 1959 and 1960 respectively, except with the modifications given vide Appendix V.*

(b) *Resolved to recommend that the existing courses of study for the M. Com. examinations be repeated for the examinations of 1961.*

3. Under section 34 (4) (iv) of the University Act, the Board elected Principal R. K. Agarwal, Bhilwara to serve on the Committee for selection of examiners in Commerce (Practice).

4. The Board revised the panel of examiners for 1958-59 and further *resolved that since lists of teachers qualified to be included in the Panel of examiners have been received from only two institutions probably because the time allowed to the institutions for sending these lists was too short, the lists received now from the various colleges may be sent*

to the Convener for inclusion of the names of those qualified for being appointed examiners for 1958-59.

5. The Board went through the question papers sent for the examinations of 1953 and offered no comments.

6. With reference to the Faculty of Commerce Resolution No. 4 dated the 17th December 1958, the Board considered the following recommendation of the Board of Studies in Commerce (Theory), as contained in its resolution No. 5 (i) of September 2, 1957 and resolved that a candidate who obtains 55% marks in M. Com. (Previous) be permitted to offer thesis in lieu of one elective paper of the group to which the thesis relates.

“5 (1) – A candidate who obtains 55% marks in M. Com. (Previous) be permitted to offer thesis carrying 100 marks in lieu of one paper. The subject of the thesis will have to be approved by the Head of the Department and in the case of private candidates by the Convener ”

7. The list of books received from Shri A. Das Gupta, Delhi School of Economics, Delhi, was kept in view while recommending books herein.

8. Letter No. 6273/58 from the Director of Economics and Statistics, Government of Rajasthan, Jaipur was considered and their publications incorporated in the list of books recommended.

S. D. Pande
(Convener)

Appendix I

(Ref B. O. S. in Commerce (Practice) Res. No. 1 of May
6 and 7, 1958)

Pre-University Course Examination

Book-Keeping.

Maximum Marks	Minimum Pass Marks	Time
100	33	3 hours.

Syllabus.

1. Principle of Double Entry System of Book keeping.
2. Preparation of Final Accounts with usual adjustments.
3. Cheques, Bills of Exchange, Promisory Notes etc.
4. Bank Reconciliation Statement.
5. Reserves for bad and doubtful debts, discounts etc.
6. Accounts Current and Average Due Date.
7. Consignment and Joint Venture Accrunts.
8. Rectification of errors.
9. Sectional and Self-Balancing Ledgers.
10. Receipts and Payments, Income and Expenditure Accounts.
11. Indian System of Accounts.

Books recommended:

1. First step in Double Entry Book-keeping by J. R. Batliboi.
2. Book-keeping and Accounts Part I, latest Edition by Jai Narain Vaish (56, Ramnagar, New Delhi).
3. Book-keeping and Accounts by C. B. Gupta (Ram Prasad & Sons) . Price Rs. 7/8/-.
4. High School Book-keeping by Kumbhat.

Appendix II

(Ref. B. O. S. in Commerce (Practice) Res. No. 1 of May
6 and 7, 1958)

First Year of the three Year Degree Course 1959 & 1960

Accounts I Paper (Principles of Accounts)

Maximum Marks	Minimum Pass Marks	Time
100	36	3 hours.

Syllabus.

Partnership accounts, Company accounts (excluding reconstruction , amalgamation and absorption) . Branch accounts,Accounts of Banking and Insurance Companies. Hire-purchase and Royalty accounts. Insolvency accounts.

Books Recommended.

1. Batliboi : Advanced Accounts.
2. Cropper : Accounting.
3. Rup Ram Gupta : Advanced Accounts.

Business Administration I Paper (Principles of Bussiness Administration.

Maximum Marks	Minimum Pass Marks	Time
100	36	3 hours.

Syllabus.

1. Nature and constitution of bussiness houses (sole traders) , Partnerships and joint stock companies).
2. Methods of financing , trading and industrial concerns.
3. Organisation of retail houses (including departmental stores, multiple shops and mail order concerns) , wholesale houses and manufacturing business.
4. Modern methods of publicity.
5. Insurance.
6. Stock and produce exchange, including a study of stock and commodity market reports.
7. Rationalisation-Business combinations, scientific management.

Note:- The subject matter of this paper is to be studied with special reference to India.

Books recommended.

1. Haney : Business Organisation.
2. Thomes : Commerce.
3. M. C. Shukla : Organisation and Management (S. Chand & Co, Delhi)
4. Ghosh and Om Prakash : Industrial Organisation Indian Press).
5. P. L. Golwalkar : Vyapar Sangthan Avam Vyavastha (Ram Prasad & Sons).
6. प्रो० सुरेन्द्रदत्त वहगुणी और प्रो० टी० एन० कठियार : व्यापारिक तथा औद्योगिक संगठन एवं प्रवन्ध (Narain Prakashan , Agra)

Appendix III

(Ref. B.O.S. in Commerce (Practice) Res. No. 1 of May
6 and 7, 1958)

Second Year of the three Year Degree Course 1960-1961 Accounts II Paper (Cost Accounting and Auditing.)

Maximum Marks	Minimum Pass Marks	Time
100	36	3 hours.

Syllabus :

Cost Accounting - Elements of cost accounting. Objects of costing. Various systems of costing. Elements of cost. Record and Pricing and materials issued. Treatment and allocation of wages. Methods of wage payment, Prime cost. Allocation of general expenses. On cost. Methods of Allocation of oncost.

Auditing - Meaning of Audit, Audit and Accountancy. Continuous and periodical audits. Audit programmes. Internal check Vouching. Verification of assets and Liabilities and their valuation. Divisible profits. Rights, duties and liabilities of auditors and their position when appointed under statute and under agreement. Company audit with reference to share capital statutory report, forfeiture of shares, transfer of shares and disposal of profits.

Books recommended :

1. परिव्यय लेखांकन Dr. Sohan Lal Gupta.
2. लेखां परीक्षण Shri Narayan Lal Nadda.
3. A Text Book of Auditing - R. R. Gupta.
4. Principles of Auditing - De Paula.
5. Principles and Practice of Auditing - J. Lancaster.
6. Auditing - Shukla (Navyug Press, Agra).
7. अंकित के सिद्धान्त By Bajpai (Narain Prakashan , Agra).

Optional - Advanced Business Statistics I Paper
(Advanced Statistical Methods)

Maximum marks	Minimum Pass Marks	Time
100	36	3 hours.

Syllabus.

Collection, classification, Tabulation, Comparison and interpretation of business statistics. Theory and measurements of

corelation. Ratio of variation and problems of regression. Analysis of time series, Economic curves, Graphic representation of more than two variables on ration scales. Theory and Methods of interpolation and extrapolation.

Books recommended :

1. Bowley : Elements of Statistics.
2. Yule & Kendall : An Introduction to the Theory of Statistics
3. Croxton & Cordon : Applied General Statistics.
4. Secrist : Introduction to Statistics Methods.
5. Ghosh and Chaudhri : Statistics.
6. C. G. Carter & A. D. Rosy : British Economic Statistics (Cambridge University Press).
7. Sprowls : Elementary Statistics (1955).

Appendix IV

(Ref. B. O. S. in Commerce (Practice) Res. No.1 of May
6 & 7, 1958)

Final Year of the Three Year Degree Course 1961 & 1962. Accounts

Scheme.

	Maximum Marks	Minimum Pass Marks	Time
Paper III - Taxation.	100	72	3 hours
Paper IV - Statistics.	100		3 hours

Syllabus:- Accounts III Paper (Taxation) —

1. Income Tax in relation to Accounts.
2. Miscellaneous Acts - Sales Tax, Wealth Tax, Estate duty, Expenditure tax, Gift Tax.

Books recommended.

1. Rup Ram Gupta : Income Tax (Agra Book Store)
2. C. B. Gupta : Income Tax Law and Accounts (Ram Prasad and Sons.
3. Indian Income-tax Act, and other relevant Acts.

Accounts IV Paper (Statistics) —

1. Meaning and scope of statistics. Fundamental principles.
2. General methods of statistical investigation. Collection of statistical data. Determination of statistical units. Sources of data, estimation. Classification observation.
3. Tabular Presentation - single tables - frequency tables - abstraction - mechanical tabulations.
4. Diagrammatic Presentation - Cartogram - Bar diagram - Polar diagram - Surface diagrams, rectangular and circular, Volumes of three dimensional diagrams - conventional forms.
5. Graphic Presentation - Histograms - simple percentage cumulation, Histograms - absolute percentage - trend.
6. Averaging - types of averages - simple, weighted, mode, median, moving average, - statistical co-efficient.
7. Methods of dispersion - meaning and purpose - absolute and relative dispersion - the Range - mean deviation - standard deviation - quartile deviation - mean difference, skewness.

8. Principles of index number — making and using the base; the choice of an average, weighing method of aggregates — relatives of aggregate — average of relatives — chain averages.
9. Simple correlation. Karl Pearson's Co-efficient of correlation.

Books recommended.

1. Boddington : Statistics.
2. Ghosh and Chaudhri : Statistics.
3. Devkinandan Alhance : सांख्यिकी के सिद्धान्त

Business Administration—III Paper (Legal aspects of Business)

Maximum marks	Minimum Pass Marks	Time
100	36	3 hours.

Syllabus :

1. Indian law relating to contracts (including sales of goods bailments, indemnity and guarantee, agency and partnership) arbitration and insolvency.
2. Elements of Indian Company Law.

*N. B. :—*Forty percent of the marks allotted to this paper shall be reserved for questions on Indian Company Law.

Books recommended :

1. Davar : Mercantile Law.
2. Sen and Banerji : Mercantile Law.
3. Sushil Kumar : वाणिज्य एवं औद्योगिक सनियम ।
4. M. S. Shukla : Mercantile Law (S. Chand & Sons, Delhi).

**Optional—Advanced Business Statistics II Paper
(Applied Statistics & Indian Statistics)**

Maximum Marks	Minimum Pass Marks	Time
100	36	3 hours.

Syllabus :

Applications to the problems of human population such as birth rates, reproduction rates, life table, etc. Calculation of the indices of production and business activity. Chain base, base shifting. Sampling surveys. Preparation of Index numbers including cost of living index numbers. Interpretation of statistical matter.

Indian statistics in relations to wages, prices, trade, industrial production, etc. Measurement of National Income. Problems and Population Statistics in India. Census work in India. Indian Index Numbers.

Books recommended :

1. Mills : Statistical Methods,
2. Official Publications of the Government of India and the Rajasthan Government.

Appendix V

(*Ref. B. O. S. in Commerce (Practice) Res. No. 2(a)
of May 6 & 7, 1958*)

B. Com. (Previous) Examination 1960.

No change.

B. Com. (Final) Examination 1961.

Commerce Practice Paper I :

Commercial and Industrial Organisation—

Delete—(9) State in relation to industry.

Paper II—Statistics.

Delete—(9) Ration of variation. Application to group series, long time and short time fluctuations. Methods of concurrent deviation—Lag, Gallon graph and regressions.

Elective subject—Advanced Accountancy :

Paper I—Income Tax and Cost Accounts.

Delete--Output and contract cost accounts. Reconciliation of cost and financial accounts.

APPENDIX B

(*Ref. Fac. of Commerce Res. Nos. 4, 5 & 6 (ii)*
of November 7, 1958).

Minutes of a meeting of the Board of Studies in Commerce (Theory), held on the 8th & 9th May, 1958 at 12.30 p.m. and 8 a.m., at the University Office, Jaipur and the Commerce College, Jaipur, respectively.

Present :

1. Dr. B. K. Tandon
2. Dr. Mali Ram
3. Dr. R. G. Sarien
4. Shri G. P. Bhargava
5. Shri L. C. Tandon

(Present on the 8th May only)

6. Shri B. D. Bhargava

(*Convener*)

1. The Board recommended courses of study in Commerce (Theory) for the following examinations (*Vide Appendix I*) :—

- (a) First year examination of the three-year degree course.
- (b) Second year examination of the three-year degree course.
- (c) Final examination of the three year degree course.

2. (a) *Resolved to recommend that the Courses of Study for the B. Com. (Previous) Examination of 1960 and for the B. Com. (Final) Examination of 1961 be the same as for the examinations of 1959 and 1960 respectively, except for the modifications given (Vide Appendix II).*

2.(b) *Resolved to recommend that the existing courses of study for the M. Com. Examinations be repeated for the examinations of 1961.*

3. Under Section 34 (4) (iv) of the University Act, the Board elected Shri G. P. Bhargava to serve on the committee for the selection of examiners in Commerce (Theory).

4. The Board revised the panel of examiners for 1958-59.

5. The Board went through the question papers set for the examinations of 1958 and offered no comments.

6. With reference to the Faculty of Commerce Resolution No. 4, dated the 17th December, 1957, with regard to the introduction of thesis

at the M. Com. Examination, the Board *resolved to recommend that* a candidate who obtains 55% marks in M. Com. (Previous) be permitted to take a thesis in lieu of any one of the 2nd, 3rd or 4th papers of the compulsory group.

7. The Board approved the books for M. Com. Examination, received from Shri A. Das Gupta, Delhi School of Economics, Delhi, as contained in his letter dated the 14th March 1958.

8. The Board considered letter No. 6273/58 dated the 25th April 1958, received from the Director of Economics and Statistics, Government of Rajasthan, Jaipur requesting to incorporate the Publications of the Bureau of Statistics, Rajasthan.

Resolved that the books were useful for the students of Commerce and they may be included in the approved books for Library of Commerce Departments in various Colleges.

9. The Board recommended a fresh panel of four persons as required under Ordinance 135, for appointment of referees to examine the thesis (submitted for the award of Ph. D. Degree) in the subject—'Economic Survey of the Alwar District.'

(Prof. G. P. Bhargava was requested to leave the meeting while recommending the panel and he did so).

10. The Board considered the question of proper nomenclature for the three Professors in colleges in the Departments of Commerce (as approved by Syndicate under Resolution No. 10 of January 28, 1958).

After considering this question from all points of view and future set up of Commerce Studies and its further expansion, the Board recommended unanimously that the professors in the Commerce Departments in affiliated colleges should be designated as follows :—

- (i) Professor of Accountancy.
- (ii) Professor of Business Administration.
- (iii) Professor of Applied Economics.

This classification is simple and would avoid all kinds of overlapping. The Head of the Department in Commerce in college will continue to be designated as before viz. Head of the Deptt. of Commerce. Usually one of the 3 professors as given above, i.e. Professor of Accountancy, Professor of Business Administration, or Professor of Applied Economics, who is the senior most will in addition be designated as Head of the Department of Commerce. After this classification is adopted there will be no person as Professor of

Commerce just as there is no Professor of Arts, or Science in the Faculties of Arts and Science respectively. The Head of the Department of Commerce will be styled as Head of the Department of Commerce and Professor of Accountancy or Business Administration or Applied Economics as the case may be.

B. D. Bhargava

Convener.

Appendix I

(Ref. B. O. S. in Com. (Theory) Res. No. 1 of May 8 & 9, 1958)

First Year Examination (Three-year Degree Course.)

Economics (Compulsory)

One Paper—	Max. Marks.	Min. Pass Marks.	Time
Economic and Commercial Geography of India.	100	36	3 Hours.

Syllabuses —

A detailed study of the Economic and Commercial Geography of India based on the natural environments involving both a topical and regional study on the following lines :—

Position, structure and geology, physical features and land forms, climate and weather, irrigation, natural resources, minerals and forces, animal and agricultural and the industries and occupations depending upon them.

Important sources of industrial power, multipurpose projects and manufacturing industries. Internal and foreign trade of the country. Quantity, quality, direction and development of foreign trade. A detailed study of exports and imports and future possibilities. Communications and transport facilities — railways, roads, waterways and airways, important sea-routes connecting India with other parts of the world. Important industrial and trade centres and ports.

Books recommended :

1. Spate : India and Pakistan (Mathuen.)
2. M. P. Gandhi : Major Industries of India (Annual).
3. Wadia & Joshi : Wealth of India.
4. M. L. Solanki : Bharat ka Arthik Bhugol.
5. INDIAN YEAR BOOK (Latest Edition).
6. Census Report of India (1951).
7. Nazir & Mathur : Regional Geography of India
(S. Chand & Co., Delhi).
8. Economic & Commercial Geography of India by Dr. T. R. Sharma & R. S. Chauhan (Gaya Prasad & Sons, Agra).
9. C. B. Memoria : India — 1958.
10. 2nd Five Year Plan.

II Year Examination (Three year Degree Course)**Economics (Compulsory)**

One Paper —	Max.	Min.	Time.
Principles of Economics.	Marks. 100	Pass Marks. 36	3 Hours.

1. *Introductory* : Scope and subject matter of the science. Its divisions and their interdependence. Economics a part of Sociology, Relation of Economics to other sciences.
2. *Methods* : Deductive and Inductive methods, as applied in Economic Science.
3. *Definitions* : e. g. Wealth, Labour Value, Money, Price, Capital, Land etc.
4. *Consumption* : Wants—definitions of total and marginal utility, demand schedules and curves. Elasticity of demand.
Consumer's surplus. Fashions and customs with their effects on demand.
5. *Production* : The factors or agents of production and labour, capital and organisation. Combination of the factors in varying proportions. Relation of the Law of Diminishing Returns and investment.
6. *Labour* : Distinctive qualities, skilled and unskilled labour, division of labour; conditions of efficiency of labour. Influence of social customs.
7. *Capital* : Conditions of accumulation of capital. Economic characteristics of machinery.
8. *Organisation of Production* : Large and small scale productions, advantages and limitations of each. Supply schedules and long period cost of production curves. Diminishing, Constant and Increasing Returns. Principles of substitution. Inventions. Specialisation of the factors of production. Localisation of Industries.
9. *Co-operation* : Agricultural & Urban, the theory and organisation of credit, distributive and purchasing societies, co-operative production, its advantages and its weaknesses.
10. *Exchange* : Theory of barter. Conditions of gain of utility by exchange. Definition of a market. Extent of the market. Balancing of supply and demand. Temporary equilibrium of

demand and supply. Joint supply and composite demand, short and long period. Equilibrium of demand and supply. Monopolies. Determination of monopoly price in actual practice. Speculation and organised markets.

11. *Distribution* : Balance of demand and supply for the factors of production. The principles of substitution. Mobility of the factors of production. Effects of introducing new methods and inventions.
12. *Rent* : Economic and Contract Rent. The Law of Rent. Economic rent, various forces determining it. Effect of improvements in agriculture and transportation on rents. The relation of the Law of Diminishing Returns to rent.
13. *Interest* : Demand for and supply of capital. Differences between short and long term investments. Mobility of capital; between localities, between industries and from less to more specialised forms of fixed capital. Gross & Net interest. Tendency to equal return on equally risky investments. The rate of return and the rate of interest. Quasi Rent.
14. *Wages and the Population Questions* : General conditions affecting demand for and supply of labour. Positive and preventive checks. Real and nominal wages. Apparent differences in wages, mobility of labour. Differences of wages in short period; their equalisation. Time and piece wages. Relation of labour and capital. The relation of population to the Law of Diminishing Returns. Over population and under population.
15. *Profits* : Normal profits as the reward of management and risk taking-surplus profits as the result of special advantages in time, place and legal rights.
16. *Public Finance* : Classification of Public Revenues and Expenditure. Canons of Taxation, Incidence of Taxation, Public Debt. Principal heads of income and expenditure of the Central and the State Governments in India.
17. Causes of national wealth and progress.

Books Recommended :

1. Taussing : Principles of Economics, Vols. I & II.
2. Thomas : Elements of Economics.
3. F. Benham : Economics (Pitman).

4. अर्थ शास्त्र by Murlidhar Joshi & Sevaram (The Upper India Publishing House, Ltd., Lucknow).
5. मुद्रा विनिमय तथा अधिकोषण; Parts I & II, by Rallan & Golwalker (Ram Prasad & Sons, Agra).
6. F. Benham : Economics (Hindi Edition).
7. K. K. Dewett : Modern Economic Theory (Hindi Edition).
8. Sen & Dass : An Introduction to Economics (Hindi Edition).

ELECTIVE SUBJECTS.

Advanced Banking

One Paper	Max. Marks.	Min. Pass Mark.	Time.
	100	36	3 hours.

1. Recent discussion of the nature and definition of money. *The problem of the standard. The triumph of the Gold Standard in the last period of the nineteenth century. The Gold Exchange standard, the theoretical implications of the Gold Exchange Standard. The value of money. Monetary stability. Recent monetary history and monetary controversies. International monetary fund and International Bank for Reconstruction and Development. Present monetary problems.*

2. Foreign Exchanges. Types of Bills of Exchange. The mechanism of foreign exchange payments. Principal foreign exchange markets. The rates of exchange. Influences affecting the rate. Purchasing Power Parity Theory, Forward exchange. Arbitrage. Dislocation of exchanges. Exchange control and management. The problem of stabilisation.

3. A detailed study of the Indian money market. Defects of Indian Banking. Effects of War. A central Bank of India. Adequacy and stability of money market in India. Agricultural Credit. Co-operative credit, its development and present position. Industrial banking and finance in India. Indian Public Debt. Recent banking developments. Means and measures to develop banking in India with special reference to Rajasthan.

Books recommended :

1. Kemmerer : Money.
2. Dadachanji : The Monetary System of India.
3. Raj. : The Monetary Policy of the Reserve Bank of India.
4. Panadikar : Banking in India.

5. De Kock : Central Banking.
6. Tannan : Practice and Law of Banking.
7. Davar : Practice and Law of Banking.
8. Thomas : Principles and Arithmetic of Foreign Exchange.
9. Paul Enz ng : Foreign Exchange.
10. भारतीय मुद्रा का इतिहास by Giriraj Prasad Gupta
(S. Chand & Co., Delhi).
11. मुद्रा की रूपरेखा by Crawther.
12. मुद्रा और विनिमय के सिद्धान्त by Giriraj Prasad Gupta
(Premier Book Co , Nai Sarak, Delhi).

Public Economics

	Max. Marks.	Min. Pass Marks.	Time.
One Paper—Principle of Public Finance and Indian Public Finance.	100	36	3 hrs.

Syllabuses and books will be prescribed in the next meeting.

Final Examination. (Three-Year Degree Course)

Economics (Compulsory)

	Max. Marks.	Min. Pass Marks.	Time.
Paper I—Modern Economic Development of India and United Kingdom.	100	72	3 hours
Paper II—Banking and Currency.	100		3 hours

1. The influence of geographical and social factors on economic development of India.

2. Economic organisation of India at the beginning of the 19th Century, Later Developments.

3. Land & Agriculture. Brief study of Indian agriculture before 1857. Effect of international competition on Indian agriculture after 1857. Agriculture famines. Holdings in India. Yield of crops. Irrigation. Land tenure. Agriculture marketing. Agricultural co-operation. State and Indian agriculture.

4. Industrial development. Brief study of Indian industries before 1957. Causes of decline of Indian industries. Factory develop-

ment. Detailed study of organised industries in India. Cottage industries. State and Indian industries.

5. Labour problems. Factory Acts, trade disputes legislation. Trade Unions. Social Insurance. Problems of labour welfare and efficiency in India.

6. Transport. Railway development in India. Roads, rail road competition. Rivers and canals, India's demand for reservation of her coastal trade. Indian shipping and ship-building industry. Indian airways.

7. Trade and tariff. India's foreign and international trade after 1957. Protection in India. Imperial preference. Trade pacts with other countries. Recent tendencies in India.

United Kingdom :—

England since 1760—Salient features of Industrial, Agricultural & Commercial Revolution.

Industrial and Commercial Policy during Twentieth Century. Trade Unionism and Social Security (Outline). Effects of the two World Wars. British Economy.

Books recommended :

1. G. W. Southgate : English Economic History.
2. C. P. Srivastava : Modern Economic Development of England & India (Gautam Brothers, Kanpur).
3. R. N. Dubey : Economic Development of England.
4. Jathar & Berry : Indian Economics, Vols. I & II.
5. Gidgil : Modern Industrial Evolution of India.
6. The Indian Year Book (Latest Edition).

Banking and Currency :

Paper II—Banking and Currency.

Note ,—Candidates are not expected to possess a detailed knowledge of the subject.

Currency :—The functions of money; qualities of good money material; importance of money; various kinds of money. Quantity theory of money value. Inflation and deflation. Index numbers. Various methods of Note issue. War and the ruin of the gold standard. Post-war restoration of the gold standard. Economic depression and the gold standard.

Banking :—The nature of banking; types of banks; functions of modern banker; banking operations; banking and money market. Fluctuations in Bank rate in relation to trade Industry and commerce.

The Indian Currency system, a brief historical retrospect from 1870 to 1925. Recommendations of the Hilton Young's Currency Commission, 1926 The present currency system in India.

Indian Banking System :—A detailed study of the Indian Money Market, Exchange Banks, Joint Stock Banks, Co-operative Banks, The Imperial Bank. The Reserve Bank of India. Defects of Indian Banking organisation. Lines of future banking development.

International Trade and Foreign Exchange :—Advantages of Foreign Trade. International currency, Mint Par, Specie Points. Fluctuations in the rate of exchange. Exchanges during the war and Post-war exchange.

Books recommended :

1. Krishna Kumar Sharma : Indian Money Market.
2. Krishna Kumar Sharma : Currency and Commerce.
3. Jathar and Berry : Indian Economics Vol. II.
4. Harrod : International Economics (Camb. University Press)
5. Robertson : Money.
6. L. C. Jain : The Monetary Problems of India.
7. C. N. Vakil : Currency and Prices in India.
8. Sayer : Modern Banking (O. U. P.)
9. B. R. Misra : Indian Provincial Finance
(Oxford University Press)
10. मुद्रा और बैंकिंग by Dr. Mali Ram (Agra Book Stores, Agra)
11. करेंसी, बैंकिंग तथा राजस्व by Dr. Kashi Prasad Mathur &
B. S. Saxena (Uttar Chand Kapoor
& Sons, Delhi)

Elective Subjects :

The syllabus in Banking & Public Economics will be drafted in the next meeting of the Board.

Appendix II

(Ref. B. O. S. in Commerce (Theory) Res. No. 2 (a) of
May 8 & 9, 1958)

B. Com. Previous Theory I Paper— Principles of Economics
including Public Finance.

Add the following books under respective papers :—

B. Com. (Previous)

1. P. C. Jain : A Text Book of Principles of Economics
(Chaitnaya Pub., Allahabad)
2. राजस्व एवं भारतीय वित्त व्यवस्था (गौतम ब्रदर्स, कानपुर मू० ५॥)

B. Com. (Previous) Theory II Paper—

(Banking and Currency)

3. मुद्रा तथा बैंकिंग by प्रो० सरदार सिंह (रमेश बुक डिपो, जयपुर
मू० ६॥॥)

B. Com (Final) (Commerce — Theory I Paper)

(Economic Development)

For teachers use :

Add—Britain in 1957 (U. K. Government Publication)

Indian Economic Problems by P. C. Jain,

(Chaitnaya Pub. Allahabad)

Indian Economics (Maitra & Chatterji)

B. Com. (Final) (Commerce — Theory II Paper)

(Economic & Commercial Geography)

Add—1. C. B. Memoria - आर्थिक और वाणिज्य भूगोल

(Gaya Prasad & Sons)

APPENDIX C

(*Ref. Fac. of Commerce Res. No. 6 (ii) of November 7, 1958*)

Minutes of a meeting of the Board of Studies in Commerce (Theory) held on the 8th September, 1958, at 1 p. m. at the University Office, Jaipur.

Present :

1. Dr. B. K. Tandon
2. Dr. Mali Ram
3. Dr. R. G. Sarien
4. Shri G. P. Bhargava
5. Principal B. D. Bhargava

(*Convener*)

The Board recommended the following syllabuses —

1. Second Year and the Third year Examination of the Three Year Degree Course to be held in 1959-61 in Public Economics.

There will be two papers in Public Economics carrying 100 mark each, the minimum pass marks being 36.

Second year—Public Economics—Paper I

Importance and scope of public economics—Economic functions of a modern State—Theory of maximum social advantage—Ways to full employment through Public Finance—Public Finances and redistribution of incomes and wealth.

Importance of Public Expenditure — its classifications, canons and principles of public expenditure as regulating devices. Importance of Public Revenues — its classification. Taxation — definition and characteristics of a tax, canons of taxation, incidence and impact of a tax, shifting of taxes. Taxes on income, property, sales of goods and transactions. Non-tax sources of revenue.

Public Debt — its definition, forms and characteristics. Impact of Public Loans, their regulation and redemption.

Third year—Public Economics—Paper II

Indian public finance. The source of Central and State revenues and the main items of Central and State expenditure in India. The merits and demerits of allocation between Central and State Governments

of the sources of revenue and items of Expenditure. An outline of the system of taxation in India — its effect on employment, investment and Industry. A detailed study of Income-tax, Estate Duty, Wealth Tax, Sales Tax, Central Excise and Customs Duty. A detailed study of the Rajasthan Government Budget. Sources of revenue and items of expenditure of the local self governing institutions in India and their relations with State Governments. Financing the Plans. Deficit financing.

Books recommended :

1. Public Finance by Dalton.
2. Public Finance by J. K. Mehta and Agrawal.
3. Public Finance by R. N. Bhargava.
4. Public Finance by Saxena.
5. Social Frame work by Hicks.
6. Study of Public Finance by Pigou.
7. Indian Provincial Finance by B. R. Mishra.

Books Nos. 1 to 6 are recommended for both the examinations (the Second-year and the Third year, and book No. 7 is recommended for the Third-year Examination only.

2. B. Com. (Final) Banking and Public Finance.

The Committee was of the opinion that for B. Com. (Final) of 1961-62 the same syllabus be prescribed in Banking as is laid down for 1958 for the B. Com. (Previous) in Banking and Currency.

3. The Committee prescribed the following courses for 1960-61 in Elements of Economics and Commercial Geography for the Pre-University Examination, 1960.

There will be two sections in this paper A and B carrying 50 marks each. Students should attempt at least two questions from each section.

Section A (Elements of Economics).

1. Introductory—Definition, subject matter and scope of Economics, its divisions and their interdependence.
2. Definitions of wealth, goods, value, utility, price and classification of wealth.
3. Consumption—Its meaning, wants, their characteristics, Classification of wants, law of diminishing utility. Law of equi-marginal utility—Family Budgets.

4. Production—Meaning and its importance—factors of Production—land, labour, capital, organisation, Enterprise.

Land: Its meaning, characteristics and importance in production—Law of Diminishing Returns.

Labour: Its meaning, main characteristics and factors affecting its efficiency.

Capital: Its meaning and importance—factors affecting its growth.

Organisation and Enterprise: Importance of organisation—Functions and qualities of an Organiser and Entrepreneur—large scale and small scale production—advantages and limitations of e ch. Division of Labour—Types—advantages and disadvantages. Use of machinery in production—its merits and demerits.

5. Exchange—Meaning and importance—Barter, gain of exchange. Market, its definition and extent. Demand and Price. Supply and Price and Elementary knowledge of the Theory and value. Money—its definition, functions, kinds and importance. Credit—its meaning and forms.

6. Distribution—Its meaning and Elementary knowledge of rent, wages, interest and profit.

Section B (Commercial Geography).

Elementary study of the Economic and Commercial Geography of India and Pakistan with reference to Physical features, natural regions and political divisions, climate, rainfall, natural vegetation, agriculture, sources of power, location of industries, population and means of communication and transport, study of the important commercial and industrial crops of the world with special reference to Rice, Jute, Cotton, Tea, Sugar and Wheat. A study of the important minerals of the world namely, Coal, Iron, Manganese, Mineral Oils and Mica.

Ports and their hinterlands and commercial centres in India and Pakistan.

Books recommended:

1. Vanijya Arth Shastra by Satya Deo Dersabri.
2. Arth Shastra-ka-Parichya (in Hindi) by A. N. Agrawal.
3. Arth Shastra-ka-Dig Darshan (in Hindi) by G. L. Joshi.

4. Bharat-ka-Arthik Bhugol (in Hindi) by C. B. Mamoria.
5. Bharat-ka-Arthik Bhugol (in Hindi) by Solanki.
6. Bharat-ka-Arthik Bhugol by Hukku and Saxena.
7. Arthik Bhugol by S. S. Kulshreshtha.

4. The Board noted that the training clause for M. Com. classes has not been printed in the Syllabus and recommended that it should now be incorporated.

B. D. Bhargava
Convener.

APPENDIX D

(Ref. Fac. of Commerce Res. Nos. 4 & 6 (iii) of
November 7, 1958)

Minutes of a meeting of the Board of Studies in Commerce (Allied), held on 7th and 8th May 1958, at 12.30 P. M. and 10.00 A. M. respectively, at the University Office, Jaipur.

Present :

1. Shri M. N. Mathur
2. Dr S. S. Kulshrestha
3. Shri K. N. Mehta (Coopted)
4. Shri B. D. Bhargava
5. Shri R. S. Yajnik

(Convener).

1. The Board recommended courses of study in Commerce (Allied subjects) for the following examinations :

- (a) Pre-University Course Examination as *per appendix I.*
- (b) 1st year examination of the three-year degree course, 1959 & 1960 as *per appendix II.*
- (c) 2nd year examination of the three-year degree course 1960 & 1961 as *per appendix III.*
- (d) Final year examination of the three-year degree course 1961 & 1962 as *per appendix IV.*

2. (a) *Resolved to recommend that the Courses of study for the B. Com. (Previous) Examination of 1960 and for the B. Com. (Final) Examination of 1961 be the same as for the examinations of 1959 and 1960 respectively.*

(b) *Resolved to recommend that the existing courses of study for the M. Com. Examinations be repeated for the examinations of 1961.*

3. Under Section 34 (4) (iv) of the University Act, the Board elected Shri M. N. Mathur to serve on the Committee for Selection of Examiners in Commerce (Allied subjects).

4. The Board revised the panel of examiners for 1958-59.

5. The Board went through the question papers set for the examinations of 1958 and offered no comments.

6. With reference to the Faculty of Commerce Resolution No. 4 dated the 17th December 1957, the Board considered the recommendation by the Board of Studies in Commerce (Practice) as contained in its resolution No. 5 (1) of September 1957 and *resolved to recommend that* a candidate who obtains 55% marks in M. Com. (Previous) be permitted to offer thesis in lieu of one compulsory paper.

R. S. Yajnik

Convener.

Appendix I

(Ref. B. O. S. in Commerce (Allied) Res. No. 1 (a)
of May 7 & 8, 1958)

Pre-University

3. Mathematics : Commercial Arithmetic, Algebra and Trigonometry :

(1) Commercial Arithmetic—Proportions, Percentages, Stocks and Shares. Present worth and discount, Exchange rates, Partnership, Profit and Loss, Commission, Brokerage, Premium, Simple and Compound interests.

(2) Algebra :

Arithmetical, Geometrical and Harmonic Progressions. Theory of Indices and Logarithms.

(3) Trigonometry :

Measurements of angle, Trigonometrical ratios of sum and difference of angles, practical application of logarithms.

Books recommended :

Commercial Arithmetic by Solaria (Oxford).

Commercial Arithmetic by S. R. Mital.

High Algebra by Hall & Knight (Macmillan).

Trigonometry by Loney.

Business Methods.

Section A of 50 marks.

1. Forms of Business Organisation—(1) Sole trader (2) Partnership (3) Companies. Home trade courses of a home trade transaction.

Preparation of Invoice. Debit and Credit Notes.

Statements of Accounts and Accounts Sales.

2. Foreign trade, procedure of importing and exporting goods and preparation of export invoices.

3. Negotiable Instruments, Cheques, Bills of Exchange, Promissory Notes and Hundies.

4. Insurance, Elementary principles of Life, Fire and Marine Insurance.

Books recommended :

1. Intermediate Vyapar Padhati by B. D. Bhargava, C. E. Memoria and Sobhag Chandra.

2. Subodh Adhunik Vyapar Shiksha, Parts I & II, by G. L. Joshi (The Students' Book Co., Jaipur & Jodhpur).
3. Adhunik Vyapar Padhati, Parts I & II, by R. P. Singh and B. L. Mathur.
4. व्यापार संचालन by Rameshwar Mishra, Lucknow Book House.

Section B of 50 marks.

Correspondence and Market Reports in English and Hindi (25 marks each).

Note : Both English and Hindi sections will contain questions on Correspondence as well as Market Reports.

Books recommended :

a) English—

1. M. P. Singh : Correspondence and Essays (Kishore Publishing House).
2. Market Reports by Lorenzo.
3. Market Reports by T. S. Katiyar (Frank Bros., Delhi).

Price Rs. 1/12/-.

4. Market Report and Correspondence by Kumbhat and Shah.

b) Hindi—

1. G. P. Bhargava : Precise Writing, Hindi Correspondence & Market Reports (Educational Publishing House, Alwar). Rs. 2/8/-.
2. व्यापार समाचार एवं पत्र व्यवहार by कुम्भट तथा शाह ।

Steno-Typing

2. Optional.

There will be two papers, one on Shorthand and other on typing, each of 50 marks.

(A candidate, in order to be declared pass in the subject Steno-typing, should secure 33 per cent marks in the aggregate of the two papers, subject to a minimum of 20 per cent marks in each of the two papers).

1. Short-hand and type-writing in English of 50 marks each,
Short-hand Speed—60 words per minute.
Type-writing Speed—25 words per minute.

Or

2. Short-hand and type-writing in Hindi.

Short-hand Speed—60 words per minute.

Type-writing Speed—20 words per minute.

Type-Writing—Hindi and English

3. Type-writing in English and Hindi

English Speed—25 words per minute. Hindi—Speed—20 words per minute.

This will be the same as in Commerce for the High School Examination but of a more advanced character, the speed to be 30 words per minute in English Type-writing and 20 words per minute in Hindi Type-writing.

The maximum marks and time allowed to the paper in this subject are as follows :

		Marks.	Time allowed.
Type	(a) Passage and Letter	35	} 1 hour.
Copying	(b) Tabular Statement	15	
Total		<u>50</u>	

Books recommended :

English—1. The New Manual of Typewriting by Y. D. Keskar and Jagdish Saran (G. R. Bhargava & Sons, Chandausi).

2. Type-writing Manual, Part II, A & B by Saxena and Vidyarthi (Nand Kishore and Bros., Benaras),

3. Saral Type Shiksha, Part I, by L. Joshi (Bharat Publishing House, Jaipur). Price. Rs 3/-.

Hindi— सचित्र टाइप शिक्षा पार्ट १ लेखक श्री. एल. अजमेरा ।

Shorthand (English or Hindi)

1. Writing in shorthand from a passage dictated at the rate of 80 words a minute, for a period of ten minutes.

2. Writing in shorthand from a business letter of general commercial phraseology dictated at the rate of 80 words a minute, for a period of five minutes.

3. Transcription of both the above.

Books recommended :

English—Pitman's Instructor by Pitman and Sons, London.

Hindi—1. Shree Brahmakshar Prakash or the Hindi Shorthand Manual by Radehlal Trivedi.

2. ऋषि प्रणाली ।

3. All Languages Shorthand by J. K. Tandon,

Appendix II

(Ref. B. O. S. in Commerce (Allied) Res. No. 1(b) of May 7 and 8, 1958)

COMPULSORY SUBJECTS.

First Year (Three Year Degree Course) Examination.

Hindi Text and Rapid Reading, for one year only.

Hindi Text :

जीवन और साहित्य by Dr. Uday Bhan Gupta
(Shri Ram & Company, Agra).

Rapid Reading :

गद्याब्जली by Dr. Sarnam Singh & L. R. Shah
(Students Book Company, Jaipur)
Rs. 1/12/-.

English Text and Rapid Reading (Limp Paper cover).

English Text : For one year only.

Ideals of Life by Brijadish Prasad, M. A., D. Phil.
(Laxmi Narain Agrawal).

Rapid Reading :

Story of my Life by M. K. Gandhi
(Navjivan Publishing House,
Ahmedabad.)

Appendix III

(*Ref. B. O. S. in Commerce (Allied) Res. No. 1(c) of May 7 and 8, 1958*)

Second Year (Three Year Degree Course) Examination.

English Unseen, Composition, Essay Writing, Precis Writing etc.

	Marks
1. Unseen Piece.	20%
2. Short General Essay of not more than three pages, one Essay at least descriptive and one narrative and one reflective. It should be on social and cultural interest.	20%
3. Corrections of sentences. At least 10 sentences must be given out of which students should be asked to correct five.	10%
4. Use of Tense Sequences and Direct & Indirect Narrations.	10%
5. Translation from Hindi into English.	20%
6. Simple Precis Piece.	20%

Business Administration Paper.

(Secretarial Practice)

The work of Secretaries of limited companies in India with particular reference to—

1. Formation, Issue of Capital, Prospectuses, underwriting, Memorandum and Articles of Association.
2. Circulars to Shareholders, Reports, Financial and Statistical Returns.
3. Statutory Books, Returns to be filed with the Registrar.
4. Transfer of Shares and Debentures. Payment of Dividends and Interest.
5. Procedure at Meetings of Directors and Shareholders. Kinds of Meetings and Resolution. Notices, Agenda, Minutes, Proxies, Methods of voting.

Books recommended :

1. S. A. Sharlekar: Secretarial Practice (Kitab Mahal, Allahabad). Price Rs. 6/3/-

2. Layman's Guide to the Indian Company Law (Published by the Department of Company Law Administration, Ministry of Finance, Government of India, New Delhi) Price Rs. 2/4.
3. Bahl : Secretarial Practice.

Appendix IV

(Ref. B. O S in Commerce (Allied) Res. No. 1 of May
7 and 8, 1958)

Third Year of Three Year Degree Course.
English Essay on Economic & Commercial Topics.

Books recommended :

Paper I—

1. C. B. Mamoria & S. L. Doshi: Current Economic and Commercial Essay (P. C. Dwadesh).
2. Maheshchand & Sridhar Misra: Select Essays of Economic & Commercial Interest.
3. Rajasthan Government Publications on Economics Statistics and Planning.

Elective-Subjects.

Second Year of Three Year Degree Course.

1. Actuarial Science :

- (1) Calculus of Finite differences, Separation of Symbols; interpolation for unequal intervals; inverse; interpolation; differences of Zero.
- (2) Probability as given in Mathematics for Actuarial Students, Part II by Harry Freeman, excluding application of the Calculus to Probability and Geometrical solutions.

2. Mathematics.

(a) *Algebra.*

Quadratic Equations involving two or more unknown quantities. Theory of Quadratic Equation and of expressions of the second Degree; Surds; Imaginary Expressions: Binomiyal Theorem for any rational index; Exponential and Logarithmic Series; Partial Fractions; Elementary Theorems on convergence and Divergence: Easy Determinants, Simple Continue Fractions and Probability Convergence & Divergence. Easy Determinant and Simple Continued Fraction.

(b) *Trigonometry :*

Trigonometrical Functions and their relations to one another. Transformations of products and sums. Trigonometrical ratios of

multiple and sub-multiple angles identities, equation; Properties of triangles and of Circles connected with them, solutions of triangles, Problems on heights and distances; Inverse Trigonometrical Functions and De Moivre's Theorems.

Books recommended :

1. Inter. Algebra : B. R. Gangwar & R. C. Gaur.
2. Higher Algebra : Hall & Knight.
3. Plane Trigonometry : Loney Parts I & II.
4. Plane Trigonometry : Patni & Gupta.

3. Insurance :

Life Assurance :

Principles and practice of assurance. Use and purpose of the proposal and forms associated therewith. Life assurance contracts their nature and characteristics. Insurable interest. Parties to the contract and their rights and duties. Conditions & terms of policy and effect of non-compliance therewith. Assignment, Claims, Surrenders, Reassurance. Types of assurance. The Prospectus its general construction and uses.

Constitution of life office, organisation, practice in connection with the collections of premiums; revivals; loans; surrenders; claims and annuity payments. Compilation of statistics, Records; agency and secretarial matters; life assurance advertisements.

Mortality tables, the general nature, characteristics and use of the principal tables, including an elementary knowledge of methods of construction. Life office valuations; sources of profit and methods of distribution. Main provisions of the Insurance Act, 1958 affecting Life Insurance Companies. Canons of Life Insurance investments and differentiation from the investments of general insurance company. Present day Organisation and state of life insurance in India.

Books recommended :

1. Insurance - Principles and Practice by R. S. Sharma (Vora & Co.)
2. Insurance Principles, Practice and Legislations by Prof. M. K. Ghosh and Mr. A. N. Agarwal (Indian Press).
3. Insurance by T. E. Young (Pitman).
4. Principles & Practice of Life Assurance by R. E. Underwood.
5. A x Guide to Life Assurance by Leigh.

6. Life Insurance from Proposal to Policy by Taylor and Taylor (Pitman).
7. Life Insurance Simplified by H. D. Dougharty (Buckley Press).
8. Construction of Mortality and Sickness Tables by Elderton and Fippard (A and C Black, Ltd.).
9. Life Assurance in India by P. A. S. Mani (Hindustan Advertisers, Bombay).
10. Law relating to Life Assurance in India by Tara Das, Delhi.

4. Trade & Transport :

Trade :

- (a) Brief history of the development of Indias' trade with the world since 1850. The present position. The chief imports, their countries of origin. The importance of the Indian markets to those countries.
- (b) The chief exports and their destination, Importance of India as a supplier of the various commodities in those markets.
- (c) Balance of payment of India in recent years.

Books recommended :

1. P Ray : India's Foreign Trade.
2. Adarkar : Fiscal Policy in India.
3. Dey : Indian Tariff Problem.
4. Narayanswami Naidu : India's Trade.
5. Gangulis Reconstruction of India's Foreign Trade.
6. Vakil and Bose : Growth of Trade and Industry.
7. Trade in India by C. B. Mamoria.
8. भारतीय व्यापार by Dr. Shivedhyan Singh Narayan Prakash, Agra.

5. Steno-Typing :

TYPING ENGLISH OR HINDI.

Speed to be 45 words per minute in English Type-writing and 40 words per minute in Hindi Type-writing.

The maximum marks and time allowed to the paper in this subject are as follows—

Paper I

Type Copying :

(a) Passage with corrections as in proof reading and letter (Candidates are requested to put into proper form).	}	60
(b) Tabular Statement.		20
Marks allotted		80
Time allowed.		1 hour.

Paper. II

Theory of Type-writing :

Marks allotted	20
Time allowed	two hours.

Third Year of Three Year Degree Course.

1. Acturial Science :

- Standard formula of approximate summation and integration.
- Compound interest; annuities; certain loans repayable by instalments; simple methods of determining the rate of interest in a transaction.

Books recommended :

- Acturial Mathematics by Harry Freeman.
- Institution of Actuaries Text-Book on Compound Interest by Todhunter.

2. Mathematics :

(a) *Differential Calculus :*

Differential coefficient; Geometrical significance of dy/dx and its application; Differentiation of sum, product and quotient, Differentiation of $y^x \cos^x \log^x$ function of a function and of trigonometrical circular functions and inverse functions. Successive differentiation, Limits, continuity, Taylor, and Maclaurin's Theorems.

(b) *Integration Calculus :*

Integration of $x^n \cos^x \log^x$ and of Trigonometrical circular Functions and inverse functions. Integration by substitution Integration by parts and Easy Reduction Formula. Geometrical interpretation of a definite integral, Rectification of plane curves and Quadratures.

Books recommended :

1. Intermediate Calculus ; Gaur and Patni.
2. Differential Calculus : Gorakh Prasad.
3. Integral Calculus : Gorakh Prasad.

Insurance :

3. Other Classes of Insurance :

Constitution of general insurance companies. Fire—the basic principles of fire insurance contracts. Fire policy—conditions and their meanings. Insurable interest. Assignment of policy Subrogation, contribution, average, claims, proximate cause, onus of proof, abandonment and reinstatement. Average clauses and loss apportionments. Kind of policies. Reinsurance.

Marine contract of marine insurance. Kinds of policies; risk insured against. Duration of the risk. Insurable interest and value disclosure and representation. The slip and policy. Premium and return of premium. Double insurance. Assignment of Policy. Particular average and particular charges; salvage; general average; Lloyd's.

An elementary knowledge of workmen's compensation, insurance, motor insurance and burglary insurance. Insurance Act 1938—Main provisions concerning general insurance business.

Books recommended :

1. Insurance, Principles, Practice and Legislation by Prof. M. K. Ghosh and Mr. A. N. Agarwal (Indian Press).
2. Fire Insurance Principles and Practice by Brooke (Post Magazine, London).
3. Principles and Practice of the Insurance by F. Goodwin and Kenneth C. Woods (Pitman).
4. Marine Insurance by F. Templeman and C. T. Greenacre (Macdonald and Evans).
5. Workman's compensation and Employment Injury by W. J. Herridge (Calcutta Insurance Association).
6. Principles of Insurance Law by Eke (Pitman).
7. Talks on Insurance Law by Watsen (Pitman).
8. Law of fire Insurance by Sanford D. Coal (Pitman).
9. Indian Insurance Act, 1938 with Rules there under.

10. Insurance Accounts and Investments by Welson and Hammond (Post Magazine London).
11. Insurance Office Organisation by Waldon and Sherif (Pitman).

4. Transport :

- (a) Railway Transport—Capital & Expenditure. Railway charges. classification Growth of Indian Railways. Relation with the State. Controlling organisation for Railways in India. Railway Finance.
- (b) Growth of Motor Transport. History of Road-Development in India. Advantages of Road Transport and its Economic Sphere. Road Finance.
- (c) Water Transport—Inland water Transport and coastal Transport with special reference to India.
- (d) Air Transport—Economic Functions. Nationalisation.
- (e) Competition between different forms of Transport. Co-ordination of different forms of Transport.

Books recommended :

1. Bonavia, M. B. : Economics of Transport.
2. Tiwari : Railways in Modern India.
3. N. L. Bhatnagar : Transport.
4. Adhunik Pariwahan : Dr. Shiv Dhiyan Singh Chauhan.

5. Shorthand :

Shorthand English or Hindi.

1. Writing in shorthand from a passage, dictated at the rate of 120 words a minute for a period of 10 minutes and to be transcribed directly on the Typewriter within one hour.
2. Machenism of Type-Writing by University Examiners like Science subject. Marks allotted 80.
(Practical Examination, Marks allotted 20.

APPENDIX E

(*Ref. Fac. of Commerce Res. No. 6 (iv) of November 7, 1958*)

Minutes of meetings of the Sub-Committee appointed by the General Education Committee to recommend courses in General Education held on Monday, the 5th May, 1958 at 12.30 P. M. at the University Office and on Tuesday the 6th May 1958 at 9.30 a. m. at the residence of Prof M. V. Mathur.

Present

1. Dr. M. L. Sharma
2. Principal C. B. Gupta
3. Prof. M. F. Soonawala
4. Prof. M. V. Mathur

(*Convener*)

I. The Sub-Committee took into consideration the report of Government of India's Study Team on General Education, the recommendations of Regional Conference on General Education held at Aligarh regarding syllabus in General Education, and the prospectuses of some Indian Universities collected by the University Office. The Sub Committee also noted the contents of a letter received from the Registrar, Aligarh Muslim University regarding compilation of teaching material in General Education. The Sub Committee was handicapped in its deliberations by the absence of 2 experts on General Educations, namely Dr. P. Maheshwari (Delhi University) & Dr. Baljit Singh (Lucknow University) who had been specially invited by the University to attend these meetings. The Sub-Committee could not get much help from the syllabi in General Education of other Universities. However, the Sub-Committee consulted a number of books on topics relating to General Education and resolved to recommend as follows :—

- (1) The Pre—University course in General Education should be the same as had been prescribed by the University earlier for I. Com. Examination, i. e., it should consist of partly of 'General Science' and partly of 'Social Studies'. There will be one paper carrying 100 marks. The University's publication entitled 'Samanya Gyan' should be the recommended text book for this course.
- (2) That the Three-Year Degree Course in General Education to be started in July, 1958 for Higher Secondary Students should be as follows :—

Three Year Degree Course in General Education (For B. A., B. Sc. & B Com.)

First Year Examination 1959.

There will be one paper carrying 100 marks. The paper will be divided into two section—Natural Sciences and Social Sciences as given below :—

Natural Sciences.

1. Evolution of the Earth.
2. The Exterior and interior of the Earth.
3. Work, energy and power.
4. Matter.
5. Atomic nuclei and atomic-energy.
6. Building of molecules.
7. Uniqueness of carbon.
8. Characteristics of living organism.
9. Structure of the cell.
10. Nutrition.
11. Plant and animal metabolism.
12. Reproduction.

Social Sciences.

1. History of Social Evolution :

- (a) Early processes. Primitive societies. Origins of Social institutions, Principal factors in social growth. Role of Technology.
- (b) Development of civilisation and culture. Salient features of Ancient and Medieval Civilisations (e g. the River-Valley Civilisations, Ancient Chinese, Greco—Roman, Arab and Medieval European Civilisations).
- (c) Patterns of Economic organisation (Pre-Industrial).
- (d) Major Political ideas.

2. Heritage of India.

- (a) Indus Valley Civilisation and the coming of the Aryans—Vedic age-synthesis of Aryan and pre-Aryan cultures—caste and social institutions, Buddhism and Jainism—social and cultural significance.

- (b) Classical Indian Civilisation.
 - (i) Government and Society.
 - (ii) Intellectual and Cultural attainments.
 - (iii) Cultural Relations with foreign countries.
- (c) The Turkish conquest—The impact of Islam.
- (d) Government and society in Medieval India.
- (e) Growth of a Composite Indian culture.
- (f) Disintegration of the Mughal Empire and the British conquest of India—Factors and processes.
- (g) British Indian Administration.
- (h) Social and Religious Movements.
- (i) National Movement (1857—1947).

Books recommended :

1. Samanya Vigyan. (Rajasthan University Publication)
2. Samajik Adhyayan. (Rajasthan University Publication)

Supplemented By :

1. History of Science—A Symposium. (Cohen & West).
2. F. Sherwood Taylor: A short Illustrated History of Science. (Heinmann).
3. K. M. Pannikar : A survey of Indian History.

(Some additional books will be suggested by
Dr. M. L. Sharma).

3. Second Year of the Three Year Degree Course 1960.

General Education.

Second year Examination of 1960

One paper carrying 100 marks.

The paper will consist of 2 sections as given below—

Natural Sciences :

1. Science in Antiquity.
2. Contributions of Ancient India to Science.
3. Copernicus and the planets.
4. Bacon and the experimental method.
5. Galileo and Kepler.
6. Harvey's discovery of the circulation of the blood.

7. The development of 'Scientific instruments in the 17th Century. Microscope, Telescope, Air pump, Thermometer, Barometer, Pendulum clock.
8. Newton and his contributions.
9. Concept of Evolution and Darwin's theory.
10. (a) Mendel's concepts of Heredity.
(b) Birth of genetics.
11. Discoveries of Pasteur and Koch.
12. Some important Scientific discoveries of the 19th Century: Dynamo and motor, Wireless, Electron X-Rays, Synthetic dyes.
13. Modern Scientific developments : Radio-Activity, Atomic Energy : Plastic and synthetic fibres, Antibiotics, Viruses.
14. The Scientific Method.
15. The impact of Science on Modern life.

Social Sciences :

1. Problems of Economic Development :
 - (a) The Industrial Revolution.
 - (b) Problems of Economic organisation in the modern world.
 - (c) Capitalism, Socialism planning and welfare-economics. The Economics of Imperialism and Colonialism.
 - (d) Economic problems of the under-developed regions.
 - (e) International Economic Cooperation.
2. Problems of Political Organisation :
 - (a) Basic concepts of Liberalism and Socialism. Principles of Democratic Organisation. Main types of Constitutions—Unitary, Federal, Presidential and Parliamentary.
 - (b) Modern Imperialism and Imperialist conflicts. The resurgence of Asia.
 - (c) International Organisation—The U. N. Charter—The U. N. and its subsidiary Organisations—Maintenance of World peace.
3. Problems of Modern India :
 - (a) The Indian economy—Five Year Plans—Planning and Democracy.

- (b) Indian Constitution—Problems of Federal Policy—Public Administration Regionalism, Nationalism.
- (c) The problems of Cultural Regeneration—growth of composite culture.

Books recommended :

The following in addition to the books recommended for the First Year Course.

1. F. Sherwood Taylor : World of Science.
(Publisher Heinmann).
 2. Westaway : The Endless Quest : Three Thousand years of Science. (Blackie, 1934, 21 s.)
 3. R. C. Majumdar : Advanced History of India.
(for teachers).
 4. Nilkant Sastri : History of India. (for teachers).
- Some additional books will be suggested
by Dr. M. L. Sharma,

4. Third Year of the Three Year Degree Course, 1961.

General Education.

The final year's course in General Education will not include the study of any prescribed books. There will be one paper on 'General Essay' carrying 100 marks. The General Essay papers will consist on 2 short essays in Hindi or English on the subject of General Education (as recommended earlier by the Faculty of Arts Committee). Each College will arrange for a weekly Seminar on General Education, besides some tutorials for writing general essays. In the weekly Seminars, topics relating to the courses in Natural Sciences and Social Sciences already covered in the first 2 years should be discussed in a more comprehensive manner. It is expected that all the teachers handling General Education courses will guide the Seminars discussions.

II. The Sub-Committee postponed consideration of other items on the agenda. The Sub-Committee, however, resolved that the 3-year degree course to be started in July 1958 should include something about Humanities also in the General Education course.

III. The Sub-Committee recognized that the success of the General Education Courses will depend upon proper arrangements for their teaching. The Committee further recommended that the University, in conjunction with the Government of Rajasthan and the University Grants Commission and the Ministry of Education, Government of India, should convene a conference of all those teachers in

affiliated colleges who are expected to teach this course. In a conference or Seminar of this type it will be possible to acquaint the teachers concerned with the objectives of this course and the approach that should be followed in teaching the same.

IV. The Sub-Committee adjourned after authorising the Convener and Dr. M. L. Sharma to make any further recommendations on behalf of this Sub-Committee, in connection with the *Education Courses to be started in July, 1958.*

M. V. Mathur
Convener.

APPENDIX F

(Ref. Fac. of Commerce Res. No. 6 (iv) of November 7, 1958)

Minutes of a meeting of the Sub-Committee appointed by the General Education Committee to recommend Courses in General Education held on Monday, the 8th September, 1958 at 1.00 p. m. in the University Office, Jaipur.

Present :

1. Dr. M. L. Sharma.
2. Principal C. B. Gupta.
3. Prof. M. F. Soonawala.
4. Prof. M. V. Mathur

(Convener)

The Sub-Committee reviewed the syllabi and Text-books in General Education for the first year/second year and final year examinations of the Three-year-Degree Course for the years 1959, 1961 and 1962, respectively after taking into consideration Dr. P. T. Raju's letter together with the recommendation of the Board of Studies in Philosophy regarding Courses in General Education, and the Ministry of Community Development's (Government of India, New Delhi) letter dated the 24th October, 1957 regarding inclusion of Community Development Programme in University Courses, and resolved to recommend as follows:—

- I. That following be added to the course prescribed earlier for the first year examination under Social Sciences :

- (a) Add between "History of Social Evolution" and "Heritage of India":

Religion & Philosophy; outlines of Hinduism, Buddhism, Jainism, Christianity and Islam—their correlation—the fundamental unity of basic principles of religions; Vedanta and Sankhya.

Principles of literature (Poetry and Prose) with suitable examples and universally accepted Principles of literary appreciation.

- (b) Add the following to the second year course prescribed earlier:
Under paragraph 3 (a) of page 4 of the cyclostyled syllabus add "Community Development Programme".

The Sub-Committee however, felt that for bringing up proper co-ordination in the recommended syllabi it should have the advice of two expert committees consisting of Dr. M. L. Sharma, Dr. Ramanand Tiwari (Bharatpur) and Prof. M. V. Mathur for Social Sciences (including religion and literature), and Prof. M. F. Soonawala, Dr. Daya Krishna (Jodhpur) and one other Science Professor for Natural Sciences. The Convener of the Sub--Committee should co-ordinate their work.

- II. The Committee took into consideration Prof. M. V. Mathur's letter No. M-42/17 dated the 17th August, 1958 and recommended that the proposed seminar or conference should take place as suggested.

M. V. Mathur
(Convener)

APPENDIX G

(*Ref. Fac. of Commerce Rs. No. 7 of November 7, 1958*)

Minutes of a meeting of the Committee appointed by the Syndicate *vide* its Resolution No. 14 of January 28, 1958, held on the 9th February, 1958 at 11.00 a. m. at the University Office, Jaipur.

Present :

1. Dr. S. M. Mitra
2. Principal C. B. Gupta
3. Principal K. K. Chaturvedi
4. Dr. M. L. Sharma

(*Convener*)

It was unanimously *resolved* that the recurring and non-recurring grants for library books for each subject in affiliated colleges be revised as given in *appendix I*.

A note by the Dean of the Faculty of Commerce is also attached *Vide Appendix 'II'* explaining the necessity of what may appear to be an abnormal enhancement in the grant for commerce books.

M. L. Sharma

Convener

Appendix I

Minimum recurring and non-recurring grants for Library books for each subject in affiliated colleges.

Subject of Study.	Degree Colleges		Post Graduate Colleges	
	Recurring P. A. Rs.	Non-Recurring Rs.	Recurring P. A. Rs.	Non-Recurring Rs.
1. English.	400/-	1,000/-	600/-	1,200/-
2. Philosophy.	300/-	600/-	600/-	1,200/-
3. History.	300/-	600/-	600/-	1,200/-
4. Sociology.	300/-	600/-	600/-	3,000/-
5. (a) Economics	300/-	600/-	600/-	1,200/-
(b) Public Administration.				
6. Urdu/Persian/Arabic	110/- each	200/-	225/- each	300/-
7. Hindi/Sanskrit.	300/- each	600/- each	500/-	1,000/-
8. Mathematics.	350/-	700/-	750/-	2,000/-
9. Chemistry & Physics.	350/- each	700/-	750/-	2,000/-
10. Zoology & Botany.	300/-	600/-	750/-	2,000/-
11. Political Science.	300/-	600/-	600/-	1,200/-
12. Commerce.	1,000/-	5,000/-	1,000/-	5,000/-
13. Geography.	250/-	600/-	600/-	5,000/-
14. Drawing & Painting.	200/-	1,000/-	—	—
15. General Periodicals.	200/-			
16. Miscellaneous.	250/-			
17. Books for reference.	200/-	1,000/-	3,000/-	2,000/-
18. Binding.	100/-		200/-	

Appendix II

The following are the subjects, compulsory and optional, which are prescribed for the B. Com. Examination :

1. Languages
2. Accountancy : Accountancy, Auditing, Income Tax and cost Accounting
3. Commercial Law
4. Industrial Organisation
5. Statistics
6. Economics
7. Economic Development ,
8. Economic and Commercial Geography
9. Banking
10. Actuarial Mathematics
11. Trade and Transport
12. Insurance
13. Rural Economics and Co-operation
14. Secretarial Practice

The amount of Rs. 1,000/- for recurring expenditure on books on Commerce for the Library of an affiliated college, preparing for B. Com. Examination of the University, as recommended by the Committee, seems to be reasonable rather low in view of the large number of subjects and students offering Commerce and also even if these subjects were equated with subjects like Persian and Arabic which have been allotted a sum of Rs. 110/- each where the number of students offering them can be safely counted on fingers .

It may further be pointed out that a Committee appointed by the Faculty of Commerce for the purpose of recommending non-recurring grants for providing minimum equipment and requirements also has recommended a recurring grant of Rs. 1,000/- for the books on Commerce subjects for the libraries of the affiliated colleges preparing for B. Com. Examination.

C. B. Gupta
Dean

MINUTES OF THE MEETING OF THE FACULTY OF LAW
HELD ON TUESDAY, THE 18TH NOVEMBER, 1958, AT
1.00 P.M. AT THE UNIVERSITY OFFICE, JAIPUR.

PRESENT :

1. Dr. G. S. Sharma, Dean (In the Chair)
2. Shri S. C. Thanvi
3. Shri K. S. Hajela
4. Shri R. B. Tewari
5. Shri A. Natraj
6. Shri L. N. Chhangani
7. Dr. R. N. Varma

The minutes of the meeting of the Faculty of Law held on 20th December, 1957 were confirmed.

2. The Faculty unanimously elected Dr. G. S. Sharma, Principal, University Law College, Jaipur as a member on the Board of Studies in Law for the residue of the term of Shri K. R. R. Shastri (ceased).

3. The Faculty considered the recommendations of the Board of Studies in Law, made at meeting held on 5th August, 1958, (*Vide Appendix*).

It was resolved to recommend that the recommendations of the Board be accepted.

4. With reference to Syndicate Resolution No. 18 dated 28th January, 1958, the Faculty considered the question of awarding division to candidates who pass their LL. B. (Final) Examination after passing the LL. B. (Previous) Supplementary Examination.

It was resolved to recommend that a student passing either the LL. B. Previous or the LL. B. Final examination at a Supplementary Examination be not awarded any division. He should be declared as having passed the examination only.

G. S. Sharma

Dean,

APPENDIX

(Ref. Fac. of Law Res. No. 3 of November 18, 1958)

Minutes of the meeting of the Board of Studies in Law held on the 5th August, 1958 at 1. P. M. at the University Office, Jaipur.

Present :

1. Shri M. L. Sawney.
2. Shri S. C. Thanvi.
3. Shri A. Natraj.
4. Shri K. S. Hajela.
5. Dr R N. Varma.

On the proposal of Shri S. C. Thanvi, passed unanimously by other members, Shri K. S. Hajela was requested to take the Chair.

1. Dr. R. N. Varma was elected Convener of the Board of Studies in Law for the residue of the term of Shri K. R. R. Saxty (ceased).

2. Under section 34 (4) Clause (iv) of the University Act, Shri K. S. Hajela was unanimously elected a member to serve on the Committee for selection of examiners in Law.

3. Regarding item No. 3 in connection with the revision of the Panel, this Board reiterates its view as indicated in the Res. No. 3 of the Minutes of the meeting of Board of Studies in Law held on the 12th August, 1956 at p. 294 Vol. XX of the Minutes of the University about the appointment of the panel of examiners. The Board, however recommends that the names of the Professors and Readers in the different colleges of the Universities given below be included by the Registrar's Office among the panel of examiners so that suitable names may be available for selection of the examiners by the Examination Committee.

- | | | | |
|-------------|---------------|-----------------------|-------------|
| 1. Lucknow, | 2. Allahabad, | 3. Banaras, | 4. Aligarh, |
| 5. Patna, | 6. Delhi, | 7. Bombay and Panjab. | |

As for the examiners to be appointed from among the practising lawyers and the members of the Judiciary, the Board is of the opinion that it would not be desirable to draw up any list.

4. The Board perused the reports of the examiners and in view of the general complaint of the examiners that the candidates in general do not appear to have studied the standard text-books, suggests that

the University should draw the attention of Law Teachers of the Colleges affiliated to the University to discourage the students from using cheap publications and impress upon them the desirability of using the standard books.

5. The Board does not recommend any change to the Courses of study for Law examinations of 1960-61.

The Board recommends that Professor C. H. Alexandrowitz's Law book "Constitutional Development in India" be included among the books recommended for study for Branch IV Paper II of LL. M. Part II.

6. With regard to item No. 6, the Board is of the opinion that it is not desirable to make any change in the percentage of the minimum aggregate pass marks or in the pass marks of individual papers as in most of the other Universities, the aggregate pass marks in Law examinations are 50% while in this University we are still retaining them at 48%.

K. S. Hajela
Chairman.

MINUTES OF THE MEETING OF THE FACULTY OF
ENGINEERING AND TECHNOLOGY HELD ON
19TH NOVEMBER, 1958 AT THE UNIVERSITY
OFFICE, JAIPUR.

PRESENT

1. Shri V. Lakshminarayanan (in the chair)
2. Shri R. M. Advani
3. Shri V. G. Garde
4. Shri S. C. Goyal
5. Shri N. K. Chatterjee
6. Dr. M. Chaudhuri
7. Dr. A. K. Chatterjee
8. Shri N. K. N. Murthy
9. Shri N. Sidheshwar
10. Shri S. Ananta Krishnan
11. Shri J. M. Shah

As no one was holding the post of Dean in the Faculty, Shri V. Lakshminarayanan was unanimously requested to take the Chair.

1. Minutes of the meeting of the Faculty of Engineering and Technology held on 18th December, 1957 were confirmed

2. The Faculty appointed Shri V. C. Natsan, Assistant Professor of Electrical Engineering, Birla Engineering College, Pilani as a member on the Board of Studies vice Prof. K. S. Rane (Ceased).

3. The Faculty considered the recommendations made by the Board of Studies in Engineering and Technology at its meeting held on the 21st and 22nd August, 1958.

Resolved to recommend that the recommendations made by the Board of Studies vide its Resolution Nos. 4, 5 & 11 be approved (*Appendix A*).

Resolved to recommend further that the Resolution No. 13 of the Board of Studies meeting held on 21st/22nd August, 1958, be approved with the modification that the scheme do come in to force with effect from the examinations of 1961 for the Old four Year Course.

Also resolved to recommend that for the new five years course the allocation of marks be as follows :—

1. Mech, Elect. & Tele. Comu. Branches—

II Year	20
III Year	40
IV Year	40
Final Year	<u>100</u>
	<u>200</u>

2. Civil—

II Year	20
III Year	30
IV Year	30
Final Year	<u>70</u>
	<u>150</u>

3. Mining—

II Year	15
III Year	20
IV Year	20
Final Year	<u>45</u>
	<u>100</u>

4. With reference to its Resolution No. 5 dated the 18th December, 1957 accepting the following recommendation of the Board of Studies in Engineering and Technology as contained in its Resolution No. 3 dated the 17th December, 1957, (referred back by the Syndicate vide Resolution No. 9 dated the 27th February 1958 to the Board for reconsideration and giving reasons in support of the proposed change), the Faculty considered the recommendation made by the Board vide its Resolution No. 8 dated the 21st and 22nd August 1958 together with the letter

No. A/28/6/ 3604-5 dated September 23, 1958 from the Convener (Shri V. Lakshminarayana) giving reasons in support of the proposal.

Recommendation of the Board :

"In the instructions sent to Examiners, it should be mentioned that in setting each question-paper, the number of questions set shall be only one-third more than the number to be attempted "

Resolved that since candidates in Engineering examinations have revealed a tendency to omit studying some portions of the subjects and do 'selective study', in order to reduce this evil, instructions should be sent to examiners in Engineering that the number of questions set should not be more than one-third the number to be attempted.

*Note :—*This rule does not apply to such questions where the alternative is given in the questions itself. This rule does not apply to questions on 'Drawing & Design' in which adequate choice must be given.

5. The Faculty considered the recommendations of the Board of Studies in Engineering and Technology made at its meeting held on the 18th November 1958.

Resolved to recommend that the recommendations of the Board-resolutions 1 to 5 be approved with the slight modifications made (modified recommendations are at *Appendix B*).

. The Faculty considered the recommendation of the Board of studies in Engineering and Technology as contained in its Resolution No. 6 dated the 18th November, 1958.

In order to encourage members of the staff in the colleges affiliated to the University of Rajasthan to undertake post-graduate studies and research, the Faculty *resolved to recommend that* members of the staff who possess a B. E. Degree in any branch or an equivalent degree or diploma, be permitted to register themselves as candidates for the Master of Engineering Degree by

Thesis and Examination. This will not apply to the M. E. (Electronics) and M. Sc. (Tech. Electronics).

Such a candidate should work under the supervision of an expert approved by the University. He should submit a thesis on a date not earlier than two years after registration and he should also pass by examination in certain subjects as may be specified. The thesis will be examined by a Board of two Examiners of whom the Internal examiner will be the Expert under whom the candidate has worked.

Resolved further that a Sub-Committee consisting of the following persons be appointed to draft the details of the scheme :

1. Principal V. G. Garde
- 2 Dr. A. K. Chatterjee
3. Prof. J. M. Shah
4. Dr. Jai Kishan
5. Prof. B. Sen Gupta
6. Dr. N. C. Saha
7. Principal V. Lakshminarayanan (Convener)

The meeting of the Sub-Committee be called at Pilani, Jodhpur or Delhi.

7. With reference to Finance Sub-Committee Res. No. 8 (iii) dated the 16th January 1958 (duly approved by the Finance Committee and the Syndicate vide Resolution No. 2 dated 23/1/58 and 12 dated the 23th January 1958 respectively), the Faculty considered the question of abolition of moderation system at the Engineering Examinations in view of the financial stringency in the University.

Resolved that as the Moderation system is very necessary at the Engineering examinations it be continued.

V. Lakshminarayanan
Chairman.

APPENDIX A

(Ref. Fac. of Engg. & Tech. Res. No. 3 & 4 of Nov. 19, 1958)

Minutes of the meeting of the Board of Studies in Engineering & Technology held on the 21st & 22nd August, 1958 at the University Office, Jaipur.

Present :

1. Principal V. G. Garde
2. Prof. S. C. Goel
3. Dr. N. C. Saha
4. Dr. M. Chaudhuri
5. Prof. N. K. Chatterjee
6. Prof. R. M. Advani
7. Dr. A. K. Chatterjee
8. Prof. L. B. Shah
9. Prof. J. M. Shah
10. Principal V. Lakshminarayanan

(Convener)

1. Under Section 34 (4) (iv) of the University Act, Principal V. G. Garde was elected a member to serve on the Committee for selection of examiners in Engineering & Technology.
2. The Board reviewed the panel of examiners for 1958—59.
3. Resolved that the reports of examiners and the question papers set for the examinations of 1958 be circulated to the Principals of the two Engineering colleges for their comments.
4. Resolved to recommend that the new syllabus of courses (5 year scheme) printed in 1958 be adopted for the following examinations :
 1. First B. E. Examination of 1960.
 2. Second B. E. Examination of 1960—61.
 3. Third B. E. Examination of 1961—62.
 4. Fourth B. E. Examination of 1962—63.
 5. Final B. E. Examination of 1963—64.
 6. M. E./M. Sc. (Tech.) Qualifying Examination of 1959, and
 7. M. E. M. Sc. (Tech.) Final Examination of 1960.

5. *Resolved to recommend that the practical training of six months (140 working days) indicated in O. 300, be distributed as follows :*

(a) At the end of the II B. E. Examination during summer vacation not less than 20 working days.	20
(b) At the end of the III B. E. Examination during summer vacation not less than 30 working days.	30
(c) At the end of the IV B. E. Examination during summer vacation not less than 30 working days.	30
(d) At the end of the Final B. E. Examination not less than 60 working days.	60
Total working days.	140

Resolved to recommend further that the Final B. E. examination be held in the middle of February with effect from 1960 onwards. The balance of practical training and project work will be done after the Final B. E. examination in February.

6. *Resolved that the existing syllabus of courses in M. E. Electronics and M. Sc. (Tech) Electronics be re-organised so as to enable the course to be covered by (1) B. E. Tele. Commn. Graduates in 15 months and (2) B. E. Electrical and M. Sc. Physics degree holders in 24 months.*

Resolved further that a Sub-Committee consisting of the under-mentioned person be appointed to re-draft the syllabus. The Sub-Committee should submit its report on or before 15th October, 1958. The meeting of the Sub-Committee may be held either at Pilani or at Delhi, and the necessary T. A. may be paid.

Members of the Sub-Committee :

1. Dr. M B Sarwate Ministry of Transport & Communications, Block No. 2, Brassey Avenue, New Delhi.
2. Dr. B. H. Wadia, Asstt. Director Incharge, Central Electronics & Engg. Research Instt., Pilani.
3. Shri N. Mahalingam, All-India Radio, New Delhi.
4. Principal M. Sen Gupta, College of Engineering, Banaras Hindu University, Banaras.
5. Dr. A. K. Chatterjee, Vice-Principal, Birla College of Engineering, Pilani (Convener).

7. *Resolved that a special meeting of the Board of Studies in Engineering & Technology be convened some time in November—before the next*

meeting of the Faculty of Engineering & Technology, to discuss the report of the above-mentioned Sub-Committee and also other matters.

8. *Resolved that* instructions may be sent to the examiners in Engineering & Technology that the number of questions set should be only 1/3rd more than the number to be attempted.

9. With reference to Syndicate Res. No. 13 of the 27th February, 1958, the Board considered a proposal made by principal Lakshminarayanan vide his letter No. A/28/4/58/8635-36 dated the 29th January, 1958 with regard to the scales of remuneration to be paid to the practical examiners and the Chairman of the Board of Practical examiners for the various engineering examinations.

Resolved that the estimates for payment of fees to practical examiners and to the Chairman, be worked out in detail by the Principals of the two Colleges. These estimates should be considered at the special meeting of the Board of Studies in Engineering.

10. The Board considered a proposal from the Principal, M. B. M. Engineering College, Jodhpur, as contained in his letter No. G. 33/57/823 of 16th April 1958 addressed to the Convener, Board of Studies in Engineering & Technology and strongly recommended by him (Principal V. Lakshminarayanan, Convener) that suitable remuneration be paid to demonstrators and class IV servants who are required to work for the practical examinations in the Faculty of Engineering, along with the scales of remuneration payable in the Universities of Poona, Bombay and Madras.

Resolved that the question of payment of remuneration to demonstrators and class IV servants and also to clerical staff be re-examined by the Principals and the same may be discussed at the next special meeting of the Board of Studies.

11. The Board considered the following proposals of Shri V. G. Garde, Principal, M. B. M. Engineering College, Jodhpur, as contained in his D. O. letter No. 61 dated the 6th February 1958, addressed to Shri V. Lakshminarayanan and copy to this office :

- (i) To include Public-Health Engineering Design and Laboratory in the other design subjects and
- (ii) For 'project' paper there should be only one external examiner who should be paid @ Rs. 10/— per script and Rs. 100/— as setting fee of the paper. The minimum remuneration for valuation in 'Project' work should be Rs. 50/— per external examiner.

Resolved that (1) Public Health Engineering Design and Laboratory be included under design subjects and be paid a remuneration of Rs. 3/-; and (2) for the Project paper there should be only one external examiner who should be paid Rs. 10/- per script and Rs. 100/- as setting fee of the paper. The minimum remuneration for valuation and project work should be Rs. 50/- per external examiner.

12. Letter No. F. 5-9/58-T. 2 dated the 31st July, 1958, from the Secretary, Ministry of Scientific Research & Cultural Affairs, Government of India, New Delhi regarding 5 years integrated scheme in Engineering was recorded with the remark that the scheme under reference has already been brought into force in the new 5 year Syllabus of the Rajasthan University.

13. The Board discussed Professor Advani's letter No. G. 4/58/7412 dated 31st July, 1958.

Resolved that the allocation of marks for the practical training report for the examination in 1959, be as follows :—

1. Mechanical. Electrical & Tele-Communication Engineering Branches :

Second Year	25
Third Year	25
Fourth Year	150
Total	<u>200</u>

2. Civil Engineering Branch :

Second Year	25
Third Year	25
Fourth Year	100
Total	<u>150</u>

V. Lakshmi Narayanan
Convener.

APPENDIX B

(Ref. Faculty of Engg. & Tech Res. Nos. 5 & 6 of Nov. 19, 1958)

Minutes of a meeting of the Board of Studies in Engineering & Technology held on 18th November, 1958, at the University Office, Jaipur.

Present :

1. Shri V. G. Garde.
2. Dr. M. Chaudhari.
3. Shri N. K. Chatterji.
4. Shri R. M. Advani.
5. Dr. N. C. Saha.
6. Shri J. M. Shah.
7. Shri L. B. Shah.
8. Shri S. C. Goyal.
9. Dr. A. K. Chatterjee
10. Shri V. Lakshminarayanan.

1. With reference to its Resolution No. 6 and 7 of the 21st/22nd August, 1958, the Board considered the report of the Sub-Committee (appointed by it to re-organise the existing syllabus in M. E. Electronics and M. Sc. (Tech.) Electronics held on 12th October, 1958 at Delhi.

Resolved to recommend that the Report of the Sub-Committee for re-organisation of M. E. (Electronics) and M. Sc. (Tech.) Electronics be approved with a few modifications as mentioned in the copy of the Report. (*vide Appendix I*).

Resolved to recommend further that the new scheme to come into force for the candidates to be admitted in July, 1959 in M. E. (Qualifying) and M. E. (Final).

Resolved to recommend that candidates who fail in the Examinations conducted under the Old Scheme be permitted to reappear under the old regulations.

2. With reference to its Resolution No. 9 dated the 21st/22nd August 1958 the Board considered the estimates for payment of fees to practical examiners and to the Chairman for the various Engineering examinations, in the light of those worked out by the Principals of the two Colleges.

Resolved that the Estimates for payment of Remuneration to be paid to practical examiners as made by the Principals (vide Appendix II) be recommended :—

Pilani.....	Rs 20,500
Jodhpur.....	Rs. 18,300
Total	Rs. 38,800

3. With reference to its Resolution No. 10 dated the 21st/22nd August, 1958, the Board considered the question of payment of remuneration to demonstrators, Class IV servants and to the clerical staff in the light of the recommendations of the Principals of the two Colleges.

Resolved to recommend that remuneration be paid to Demonstrators, expert assistants, clerks and Class IV servants for conducting practical examinations at the rate of Re. 1/- per student per examination.

The total estimate will be as follows :—

Pilani.....	Rs. 5190
Jodhpur.....	Rs. 4715
Total	Rs. 9905 say Rs. 10,000/-

Resolved further that the amount be distributed by the Principals to the staff mentioned above at their discretion. (Detailed statement vide Appendix III).

4. The Board considered a letter No. O/6/Raj/58/2010, dated the 16th April, 1958 from the Registrar, Delhi University Delhi, regarding recognition of the examinations conducted by them in the Faculty of Engineering and Technology as equivalent to the corresponding examinations in the Faculty of Engineering and Technology of this University.

Resolved that the consideration of giving recognition to the B. E. degrees, Delhi University be taken up after our B. E. degrees have been recognised by Delhi University.

5. The Board considered letter No. D. 9/1948 dated 3-10-1958. From Sardar Vallabh Bhai Vidyapeeth Vallabh Nagar for recognition of its B. E. Degree in Civil Engineering.

“The All India Council of Technical Education and Inter University Board had decided that the Basic Degree Courses in Engineering for candidates with I. Sc. as minimum qualification, shall be of four years duration, of which not less than six months should be spent in Practical Training. The all India Council of Technical Education have now also

decided that the Basic Degree Courses in Engineering shall be of five years duration for candidates whose minimum qualification is the Higher Secondary Examination with mathematics, Physics and Chemistry".

The Rajasthan University have accepted the above decisions. Sardar Vallabh Bhai Vidyapeeth may be asked when they will adopt the four years course for I. Sc.'s and five years courses for Higher Secondary candidates.

V. Lakshminarayanan

Convener.

Appendix I

(Ref. B. O. S. in Engg. & Tech. Res. No. 1 of Nov. 18, 1958).

Minutes of the meeting of the Sub-Committee of Board of Studies in Engineering and Technology, to redraft the M.E./M.Sc (Tech.) Electronics syllabi etc., held on October 12, 1958 at Delhi Polytechnic, Delhi.

Present :

1. Dr. M. B. Sarwate
2. Dr. B. H. Wadia
3. Dr. A. K. Chatterjee

(Convener)

1. *Resolved that the Ordinances, Regulations and Syllabi for the M.E./M.Sc. (Tech.) Electronics be revised as given in Appendix.*

2. *Resolved to recommend that the Advanced Mathematics I & II courses of the M.E./M.Sc. (Tech.) Qualifying class be taught with more emphasis on Engineering applications than on Mathematical rigor.*

A. K. Chatterjee

(Convener)

Appendix

Ordinances & Regulations for admission of students to Examinations of M. E. (Electronics) & M. Sc. (Tech. Electronics)

O. 319—A. The courses of study for the M. E. (Electronics) and M. Sc. (Tech. Electronics) degrees shall be one and the same and shall extend to two years or four semesters. On satisfactory completion of the course and after passing the Final Examination, a candidate possessing the B. E. Degree qualification will be awarded the M. E. Degree, and a candidate possessing the M. Sc. Degree qualification will be awarded the degree of M. Sc. (Tech. Electronics).

O. 319—B. No candidate will be admitted to the First Year of the course of study for the degree of Master of Engineering (Electronics Branch) or Master of Science (Tech. Electronics) unless he produces a satisfactory evidence to the effect that :

(a) he has obtained the B. E. degree in Electrical Engineering in first class from this University;

OR

(b) he has obtained the M. Sc. degree in Physics with Wireless as one of the special subjects in first division from this University;

OR

(c) he has secured any degree or diploma from any other University or Institute recognised by the University as equivalent to any of the above;

Provided that if candidates having passed in first division are not available, second class candidates may be admitted as a special case.

O. 319-B 1. Candidates who have obtained B. E. degree in Telecommunication Engineering of this University or have secured degree or diploma from any other University or Institute recognised by the University as equivalent thereto, may be admitted directly to the Second Year of the M. E./ M. Sc. (Tech.) Electronics course.

O. 319—C. Whole-time teachers or Research Workers working in an Engineering or Science College affiliated to this University, or in a Engineering or Science Research Institute, possessing

the minimum qualifications for admission, will be permitted to take the course for M. E. or M. Sc. (Electronics) degree, provided they are not required to do more than half their normal work in the College or Institute.

O. 319—D. The examination for the M. E./M. Sc. (Tech.) electronics degree shall consist of the following parts :—

1. Qualifying Part I examination to be held at the end of first semester.
2. Qualifying Part II examination to be held at the end of the second semester.
3. Final Part I examination at the end of third semester.
4. Final examination Part II at the end of Fourth semester.

O. 319—E. The examination will be conducted by means of written papers, practicals (including sessionals) and thesis (including viva voce).

O. 319—F. A candidate offering himself for the Qualifying Part I examination shall have undergone a regular course of study in the subjects prescribed for the examination for one semester in a college affiliated to the University for the purpose.

O. 319—G. Candidates appearing at the Qualifying Part I Examination shall be required to show a competent knowledge of :—

1. Advanced Mathematics I.
2. Line Communication & Electro-Acoustics.
3. Mechanical Engineering (for M. Sc. candidates only)

Or

Advanced Physics I (for B. E. (Electrical) only).

O. 319—H. If a candidate fails in one or more of the written papers and practicals, he shall be permitted to keep terms in the next semester. He shall reappear and pass in the subjects in which he has failed, along with the subjects of Qualifying Part II examination.

O. 319—H 1. A candidate who after passing the Qualifying Part I examination of the University has attended a regular course of study for one semester in the subjects prescribed for the examination in an affiliated college shall be eligible for appearing at the Qualifying Part II Examination.

O. 319—H 2. Candidates appearing at the Qualifying Part II Examination shall be required to show a competent knowledge of :-

1. Advanced Mathematics II.
2. Vacuum Tube and Transistor Circuits.
3. Communication Systems.
4. U. H. F. Technique
5. Electrical Engineering (for M. Sc. candidates only)

Or

Advanced Physics II (for B. E. Electrical candidates only).

O. 319—H 3. If a candidate fails in one or more of the written papers and practicals, he shall be permitted to keep terms in the next higher class. He shall reappear and pass in subjects in which he has failed, along with subjects of the Final Examination.

O. 319—I. A candidate, who, after passing Qualifying Part I & II examinations of the University, has attended a regular course of study for one semester in the subjects prescribed for the examination in an affiliated college shall be eligible for appearing at the Final Examination.

O. 319—J. Candidates appearing at the Final Examination shall be required to show a competent knowledge of the following subjects—

1. Electronic Circuit Analysis.
2. Pulse Technique and Radar Engineering.
3. Microwave Technique.

He shall also be required to show a competent knowledge of any one of the following subjects—

1. Advanced Microwave Engineering.
2. Network Synthesis.
3. Servomechanism & Automatic Control Systems.
4. Design and Construction of Electron Devices.

O. 319—J. 1. In addition candidates with B. E. (Telecommunication) qualification shall be required to show a competent knowledge of Advanced Mathematics I and Advanced Mathematics II as prescribed for the M. E. (Qualifying) Examination.

- O. 316-K. Each candidate shall submit for examination a thesis embodying the results of the research work carried out by him during the course of two years.
- O. 319-L. The subject of the thesis shall be intimated by the candidate to the Registrar at least three months before the date of submission.
- O. 319-M. The candidate shall pursue along with the regular course of study his investigation at the college under the supervision of a member of the staff or an expert approved by the Principal.
- O. 319-N. On the completion of his research work the candidate shall submit three printed or type written copies of his thesis to the Registrar for transmission to the examiners at the time of the Final Examination or thereafter.
- O. 319-O. The thesis shall be referred to two examiners-one external, and one internal, who has guided the candidate's work. They shall examine the thesis and also conduct the viva voce test.
- If the external examiner happens to be a person residing outside India, the viva voce test shall be conducted by the internal examiner only, who shall do so in consultation with the external examiner.
- O. 319-P. A candidate who has secured the required qualifying marks in the thesis and has also passed the Qualifying and the Final Examination, shall be awarded the M. E/M. Sc. (Electronics) degree, as the case may be.
- O. 319-Q. Each written paper shall consist of two sections (A & B) and shall be set by two examiners, one internal and one external, in collaboration with each other. The answer papers in section A and B shall be written in separate answer books and shall be valued by the respective paper setters. The external examiner shall send the mark list of the section valued by him to the internal examiner, who shall submit the final mark list including the marks of the section valued by him to the Registrar.

Practical Examination in each practical, including sessional work, shall be conducted by two examiners. For the Qualifying Parts I & II Examination both the examiners will be internal. For the Final Examination one of the examiners shall be external.

R. 41-A 1.

**Scheme for M.E /M.Sc. (Tech.) Electronics Course,
Qualifying Part I Examination.**

First Semester (Second week of July to November).

A. Written Papers.

No.	Subject.	Pds. per week.	Total No. of lectures.	Exam. Hrs.	Marks.
1.	Advanced Mathematics I.	5	65	3	100
2.	Line Communication & Electro Acoustics.	6	78	3	100
3.	Mechanical Engineering or Advanced Physics I.	4	52	3	100
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B. Practicals including Sessionals :

	M.Sc. Cand.	B.E. Cand.	Total periods.	Marks.
1. Mechanical Engg. Dra- wing.	8	-	104	50
2. Workshop.	6	-	78	50
OR 3. Physics Lab.	-	6	78	100
4. Telecommunication Lab.	8	8	104	100
Total ...	<u>37</u>	<u>29</u>		<u>200</u>

Qualifying Part I Examination will be held during the last week of November.

For a Pass, a candidate must obtain a minimum of 50% marks in each written paper and practical including sessional.

R. 41-A 2.

Qualifying Part II Examination.

Second Semester (December to April).

A. Written Papers :

No.	Subject.	Periods/week M.Sc. B. E. (Elec.)	Total No. of lectures.	Exam. Hrs.	Marks
1	Advanced Mathematics II.	4	64	3	100

2. Vacuum Tube & Transistor Circuits.	4	4	64	3	100
3. Communication Systems.	3	3	48	3	100
4. U H. F. Technique.	3	3	48	3	100
5. Electrical Power Engg.	4	-	64	3	100
or					
Advanced Physics II.	-	1	64	3	100
Total ...	<u>18</u>	<u>18</u>			<u>500</u>

B. Practicals including Sessionals :

1. Electronics Laboratory	4	4	64		50
2. Communication Laboratory.	4	4	64		50
3. Electronic Workshop	3	3	48		50
4. Electrical Power Lab.	3	-	48		50
or					
Physics Laboratory.	-	3	48		50
Total ...	<u>14</u>	<u>14</u>			<u>200</u>

Qualifying Part II Examination will be held during the last week of April.

For a pass, a candidate must obtain a minimum of 50% marks in each written paper and practical including sessional.

R. 41—B.

Final Examination.

First Semester (Second Week of July to February).

A. Written Papers :

No.	Paper.	Periods Week	Total No. of Lectures.	Exam. Hours.	Marks
Compulsory subject :					
1.	Electronic Circuit Analysis.	3	75	3	100
1.	Pulse Technique & Radar Engineering.	3	75	3	100
3.	Microwave Technique	3	75	3	100
	Total	<u>9</u>			<u>300</u>

No.	Paper.	Periods per week.	Total No. Lectures.	Exam. marks Hours.
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Optional Subjects :

(Any one of the following papers).

Advanced Microwave Engg.	}	3	75	3	100
Network Synthesis.					
Servomechanism & Automatic					
Control Systems.					
Design & Construction of					
Electron Devices.					
Total					<hr/> 400

B. Practicals including Sessionals :

1. Electronics Lab.	8	200	6	100
2. Microwave Lab.	8	200	6	100
Total periods	<u>28</u>			<u>200</u>

Final Examination will be held during the last week of February.

Second Semester (From March to July).

C. Thesis :

200

For a pass, a candidate must obtain a minimum of 50% marks in each written paper and practical, as well as in thesis.

For the purpose of classification the following scheme will be adopted—

First Class : If the candidate secures 70% in the aggregate of the subjects for the Final Examination including the thesis, that is 560 marks.

Second Class : If the candidate secures 60% in the aggregate of the subjects for the Final Examination including the thesis, that is 480 marks.

Note : The marks obtained in the Qualifying Part I and Part II Examinations will not count for the division.

Advanced Mathematics I.

Algebra of matrices and determinates with application to network analysis. Elements of the theory of continued fractions, and its application to the synthesis of electrical networks.

Tensors : Absolute and relative tensors. Elements of tensor algebra. Analysis of tensor fields. Applications to electrical engineering.

Infinite Series : Absolute convergence and uniform convergence. Uniform convergence of improper integrals. Power series and its convergence.

Functions of Complex Variables : Analytic functions—Cauchy-Riemann's differential equations. Complex integration. Singularities, Branch points and Residues, Contour integration. Analytic continuum. Riemann's surface. Conformal representation. Different types of transformation—bilinear transformation and Schwarz-Christoffel transformation.

Elementary principles of mathematical theory of probability & statistics :

Probability—total and compound probability. Concept of a random variable and distribution function. Expectation. Moments. Binomial, Poisson's and Normal distribution. Correlation. Application of Statistical methods to engineering problems.

Bessel's equations : Bessel's functions and its integral representation, Recurrence relation. Neumann's functions. Orthogonality. Elliptic integrals and elliptic functions.

Advanced Mathematics II

Boundary Value Problems : Major differential equations of Physics (Laplace, Poisson, heat flow, vibrating string etc.)—their representation in one, two and their dimensions and in various coordinate systems. Nature of Solutions—uniqueness of solutions. Importance of boundary conditions. Representation of boundary conditions by orthogonal series. Fitting of boundary conditions and eigen values. Application to known cases in electrostatics, heat flow and mechanics.

Special Methods of Solution of Equations : Linear integral equations of the first and second kinds. Homogeneous equations. Calculus of finite differences. Interpolation. Elements of numerical integration and numerical solution of differential equation. Difference equation.

Calculus of Variations : Application in geometrical and physical problems. Applications in boundary value problems.

Non-linear equations : Methods of solution and application to engineering problems.

Operational Calculus : Heaviside Calculus. Laplace transform. Fourier integral. Fourier transform.

Advanced Physics I

1. *The mechanics of a single particle, and of systems of particles :*

Fundamental concepts of kinematics, Conservative Forces. Central Forces—gravitational forces. Quasi-elastic forces and harmonic vibrations with and without resistance. Forced vibration—resonance. Non-harmonic vibrations. Mechanics of a constrained particle—Single and spherical pendulums.

General Theorems of the mechanics of systems of particles. Principle of Virtual displacement—d' Alembert's principle—Lagrangian equations of the first kind. Generalised coordinates. Equations of motion of Lagrange and Hamilton. Hamilton's Principle of least action. Canonical Transformations.

2. *The mechanics of Rigid Bodies :*

Number of degrees of freedom. Rotation about a fixed axis—Euler's equations. Free axes. The symmetrical top. The mechanics of deformable bodies.

3. *Wave Motions :*

Equation of continuity as applied to wave motion. General wave equation and its solution. Surface waves. Capillary waves. Group velocity and Phase Velocity.

4. *Wave Optics :*

Mathematical functions of Huygen's principle; their uses. Interference of light. Diffraction—Fresnel and Fraunhofer diffraction—Cornu's spiral. Polarization. Scattering, absorption and dispersion of light.

Advanced Physics II

1. *Statistical Thermodynamics :*

Fundamental assumptions, Maxwell—Boltzmann, Fermi—Dirac, Bose—Einstein Statistics and their applications.

2. *Atomic Physics & Electron Theory of metals :*

Simple atomic models. De Broglie's matter waves. General Principles of Wave mechanics. Bound and free electrons in solids—energy levels. The distribution functions. Zero point energy. Specific heat. Thermionic emission—energy and distribution function of escaping electrons. Contact Potential. Photo electric effect. Electrical and Thermal conductivities. Motion of electrons in a periodic field. Brillouin zones. Nature of the superconducting states. Semi-conducting materials.

3. *Nuclear Physics :*

Nuclear structure—Elementary particles—their properties. Positron and Neutrons as Nucleons. Nuclear binding energy and stability. Mass defect Nuclei and nuclear transformations—Isotopes. Electro-nuclear machines—The Cyclotron, The Betatron, The Synchrotron. Fission and fusion. The actinide elements—transuranium elements. Nuclear energy for power—Scientific and engineering problems. Reactors.

Mechanical Engineer

Strength of Materials :

Characteristic stress-strain curve; ultimate stress; working stress and the factors of safety

Shearing force and Bending moment; S. F. & B. M. diagrams under static loads of a simple nature—Eg; concentrated or uniformly distributed loads on simply supported beams, cantilevers and over-hanging beams. Theory of Bending. Distribution of shear stress. Torsion. Principal stresses and principal planes. Orthographic projection castings, key, cotters.

Machine Drawing :

Printing, dimensioning, conventions. Rivets, screw-threads, locking devices, couplings, bearings. Ability to sketch free hand simple machine parts. Making neat finished and fully dimensioned drawings in pencil.

Workshop Technology :

Engineering materials, their composition and properties; cupola and casting practice; soldering and brazing; welding, Heat treatment; construction and operation of Machine Tools lathes; Drilling, Shaping, Milling & grinding machines in brief.

Electrical Engineering.

Electric Circuits :

Mesh and nodal analysis of linear networks (only steady state analysis) with lumped parameters. Network reduction. Star delta transformation. Thevenin's and Norton's theorems. Conditions for maximum power transfer. Locus diagrams.

Analysis of three phase balanced and un-balanced circuits.

Power and power measurement in single phase and three-phase circuits.

Electrical Machines :

Construction, theory and performance of D. C. Motors and Generators, single phase and polyphase. Transformers, three phase synchronous generator and three phase induction motors. Rotorol and the amplidyne.

Mercury Arc Power Rectifier :

Construction, principle of operation and characteristics : operation as an inverter.

Transmission and Distribution :

System of transmission and distribution. Tariff system. Economics voltage of transmission; power factor improvement. D. C. two wire distributor calculations

Measuring Instruments :

Dynamometer and Induction type meters. The megger.

Line Communication & Electroacoustics.**Line Communication :**

Telegraphy : Morse telegraph, telegraph equipments, simplex and duplex with single current and double current working, machine telegraph.

Telephony : Telephone equipments, C. B. manual exchange, antiside tone circuits, busy test. Automatic exchange-non-director and director systems. Traffic calculation and grading of service.

Lines & Transmission Networks : Infinite line, dissipationless line, transmission units, propagation constant; lossy line, distortionless lines, loading of telegraph and telephone lines, speed of working on loaded lines, reflections on lines, echoes and cross talks, electrostatic and electromagnetic interference; insertion loss, filters, equalizers.

High Speed Communication : Information and rate of transmission of information, amplitude and frequency modulation and detection, side-band transmission.

Carrier telegraphy, frequency-shift-keying, V. F. T. systems and carrier telephony. Voice frequency terminations, hybrid transformer, repeaters etc.

B. Electroacoustics.

Vibrating systems with Lumped Elements : simple and coupled oscillators-free, damped and forced oscillations, energy relations.

Representation of mechanical systems by mechanical circuit diagrams and conversion of mechanical circuit diagrams into analogous electrical circuit diagrams.

Vibrating systems with Distributed Elements : Vibration of strings and membranes—development of wave equation and its general solution, boundary conditions. Forced vibrations, orthogonality of characteristic functions, wave impedance.

Plane Sound Waves : The wave equation—derivation and its solution, Energy. Intensity. Plane progressive wave—characteristic impedance. Change of medium reflection coefficient. Propagation of sound in tubes. Acoustical elements, and acoustical circuits. Filters. Propagation of sound in horns.

Spherical Waves and Radiation : Three dimensional wave equation and its solution in spherical coordinates. Specific acoustic impedance and intensity of a spherical wave. Radiation from a pulsating sphere and from a finite piston in an infinite baffle. Directivity patterns and directivity index.

Architectural Acoustics : Geometrical theories of Reverberation and their limitations. Wave theory—standing waves in rooms. Basic design considerations of large and small rooms. Acoustic Materials.

Transducers : Microphones, Loudspeakers, and enclosures or loudspeakers. Analysis of the transducers on the basis of an equivalent circuits, and their performance characteristics.

Recording Systems : Magnetic recording—principles and general considerations of magnetic tape recorders.

Noise : General survey of noise sources and general methods for noise reduction.

Psychoacoustics : Speech, hearing, noise and intelligibility. Acoustic Measurements and measuring apparatus.

Vacuum Tube and Transistor Circuits.

A. Vacuum Tube Circuits :

Multielectrode vacuum tubes : equivalent circuits representation, Input impedance. D.C. amplifier Audio Frequency voltage amplifier—their design considerations, corner plot. Compensated Broadband amplifier. Design of Cathode follower circuits, Grounded grid amplifier. Tuned voltage amplifier.

Feedback in amplifiers—effects of negative feedback, stability, input, impedance and output impedance. Noise in amplifier.

Power amplifiers: Single ended and Pushpull, Class C amplifier.

Sinusoidal waveform generators: Resonant circuit oscillators, π network oscillators, phase shift and bridge Oscillators. Frequency stability of oscillators. Relaxation Oscillators, Multivibrators.

Regulated Power Supplies: Stabilization ratio and Output impedance. Inverter circuits.

B. Transistor Circuits:

Physical Theory:

Simple Physical theory of Junction diode and Junction Transistors; Point Contact Transistor. Simple equivalent circuit obtained from physical considerations. Space charge. Capacitance, Hole storage effect.

Circuit theory: Bias stabilization; amplifiers, Oscillators; Relaxation Oscillators, Negative resistance Oscillators. High Frequency effects in Transistors.

Communication Systems

Communication System: The Basis of radio communication—elements of a system of radio communication.

Modulation Amplitude, frequency, pulse and phase modulation. Analysis of modulated waves. Amplitude modulators—frequency modulators and Pulse modulators. Interference and Noise in modulated waves.

Demodulation (Detection): Demodulation methods—linear and square law detection. Detectors for a.m. waves. Detectors for f.m. waves and p.m. waves—discriminators—limiters.

Antenna & Propagation: Maxwell's field equations. Electromagnetic waves in a homogeneous medium. Poynting's theorem and flow of power. Radiation from an incremental antenna. Radiation resistance. Current distribution in antennas. L. F. transmitting antennas, medium frequency broadcast antennas, h-f-antennas. Directive antenna-antenna arrays. Lobe suppression.

Propagation by ground waves, direct waves and sky waves. Atmospheric effects. Ionosphere and its characteristics. Fade-out phenomenon. Noise.

Radio Transmitters and Receivers: Amplitude and frequency modulation transmitters—modulation equipment. Carrier stabilisation.

Transmitter power supply. Harmonic suppression. Feeder lines and antenna terminations. Calculation of station coverage. Receiver classification. Principle of superheterodyne receiver. Frequency changer—local oscillators—choice of i.f. and i.f. amplifiers. Tracking of oscillator. Tuning and alignment. A. V. C. and A. F. C. Communication receiver. Receiver characteristics. Noise in radio receivers—noise in limiters. F. M. receivers. Diversity reception and single side-band reception.

Receiving a-rials. Loop and rhombic aeri-als. Radio direction finding. Radio aids to navigation—radio beacons.

Television: General principles. The transmission and reproduction of high definition pictures. The iconoscope. Scanning and synchronization. General principles of Pulse-time, pulse-position and pulse-code modulation. Characters of the transmitted signal in television. Television antenna. The elements of television receiver.

U. H. F. Technique

U. H. F. Technique: Electrical concepts at u.h.f.—physical interpretation of circuit behaviour at u. h. f. U. h. f. generators; uhf effect in conventional tubes. Triode oscillators. Transit-time oscillators—klystrons, magnetrons and travelling wave tubes (general principles only).

U. H. F. Transmission Systems: Circuits with distributed parameters—uhf. transmission line; stub matching. General theory of wave guides and cavity resonators. General principles of matching and coupling devices.

U. H. F. Antenna: Radiation from dipoles, horns and paraboloids. General and directive antennas for transmission and reception with methods of calculating radiation patterns. Discussion of wave propagation for “line of sight” transmission.

U. H. F. Reception and Receivers: Limitations of receiver sensitivity by noise—signal to noise ratio. Converter and mixer at u.h.f.—classification of converter mixers.

Wide-Band Amplifiers and Frequency Multipliers: Design considerations of wide-band amplifiers for u.h.f. transmission or reception. Frequency multiplication and division by multivibrators, and counter circuits.

Measurements at U. H. F.: Employment of transmission line methods for determining voltage, current, resistance, reactance, power and frequency. VSWR measurements. Crystal detectors and their characteristics. Standing wave indicator. Bolometer. WHF Bridge and admittance meter.

Electronic Circuit Analysis.

Mesh and Nodal equations for an active circuit, choice between Mesh and Nodal analysis. Use of Matrix algebra in the study of four terminal network-application to vacuum tube circuits. Complex frequency plane-poles and zeros. Physical validity of complex frequencies. Study of transient response of linear systems by methods of operational calculus. Transient response in R. C. coupled amplifier and Compensated broad band amplifier. Maximally flat amplitude and delay response. Transient response in compensated amplifier.

Synchronous and Stagger-tuned amplifier, Over-staggered amplifier, Double Tuned circuits, Pulse amplifiers.

Feed back amplifier circuits-single loop and multiloop. Return ratio; Return difference and sensitivity. General theorems of feedback circuits. Stability and Physical realizability. Nyquist criterion for stability-Single loop and multiloop cases.

Relation between Real and imaginary components of network functions-Relation between attenuation and phase characteristics.

Problems in the Design of computer amplifiers, Problems peculiar to D. C. amplifiers.

Pulse Technique and Radar Engineering.

Linear wave shaping circuits-Differentiation and Integration. Nonlinear wave shaping-use of diodes and of multielectrode tube, clipping and clamping circuits. Vacuum tubes as switches.

Pulsed oscillators, Ringing circuits, Pulsed Hartley and Crystal Oscillators. Phase splitting amplifier; Pulsed oscillation for use with synchros.

Generation of fast waveforms: Bistable, nonstable and astable multivibrations; Triggering and synchronization. Cathode coupled Binary-hysteresis effect.

Voltage time-base generators: Thyatron and vacuum tube sweep circuits, Miller sweep, gating, phantastron circuits, Sanatron and Sana-phat, Bootstrap sweep.

Pulse transformers and Blocking oscillators; Delay line pulse generators.

Frequency multipliers and dividers. Counting.

A General principle underlying radio-location; Radar Indicators; Radar receivers and Transmitters; Radar antennas and propagation. T. R. C. devices; Synchros and Servomechanisms.

Microwave Technique

Generation of Microwave Signals : A general study (non in details) of microwave triode oscillators, klystrons, magnetrons, travelling wave tubes and backward wave oscillators. Isolation of oscillators—attenuating pads, power amplifiers and Ferrite Isolators. Frequency stabilization of Oscillators—Stabilization of operating conditions—Electronic stabilization-cavity stabilization.

Modulation : Considerations relating to power, band-width, etc. for modulation. Methods of modulation; modulation of klystrons, magnetrons standard microwave signal generators. Pulse-time modulation.

Guided Propagation : General principles of electromagnetic theory—maxwell's equations—solution of electro-magnetic field problems, Wave guides and resonators.

Microwave Circuit Components & Microwave Networks : Coaxial lines waveguide-couplings, corners, circular bends and twists Impedance-matching devices—inductive diaphragms, capacitive diaphragms, capacitive buttons and dents, quarterwavelength transformers. Pressurizing windows. Flexible coupling units. Transition Units—transition from coaxial line to waveguide, transition involving a change in waveguide mode. Mot onal Joints and Rotary Joints. Tunners, Power dividers and Switches; microwave attenuators—fixed and variable. Microwave Filters—theory and design. Materials and construction techniques of the components.

Detectors And Mixers : Types of mixers and detectors. Crystal rectifier and mixer circuits and their characteristics. Conversion loss at high frequencies. Noise Temperature R. F. and I. F. impedances. Noise Figure. Crystal types and crystal holders. Amplifier and metering circuits. Calibration of detectors F-R Box and Crystal mixer.

Microwave Measurements : (a) Power measurement—theory of the operation of a barretter-barretter and thermistor mounts—Bolometers and bolometer bridge circuits—Microwave calorimetry.

(b) Wavelength and frequency measurements—cavity Wavemeter—temperature and humidity effects for standard cavities—co-axial wave-meters. Practical wavemeters circuits (Transmission type and reaction type) microwave frequency standards, Heterodyne frequency meter.

(c) Measurement of impedance and standing waves—The slotted section and the travelling probe detector—Precision measurements of small reflections—Bridge methods of impedance measurements. Impedance bridges employing pulse modulation.

(d) Measurement of attenuation—Power-ratio method—substitution method—Errors in attenuation measurements.

- (e) Measurements of resonant cavity characteristics, Q and $R.O/Q, O$
- (f) Measurements of dielectric constants.

Network Synthesis

Basic concepts and relationships : Network synthesis problem, complex frequency, network functions, poles and zeros.

Approximation and Scaling : Semilog plots of network functions, approximation by straight line asymptotes, Frequency and magnitude scaling.

Driving point functions : Step input response of two terminal network, Brune's positive real functions. Complete testing of driving point functions. *Synthesis of two terminal networks* : Elementary synthesis operations, LC network synthesis, Foster's and Cauer's RC and RL networks.

RLC two terminal networks : Minimum positive real functions; Brune's method. The method of Bott and Duffin, Pantell's method; Miyata's method. Properties of transfer functions, Ideal transformers, synthesis with ideal transformers; Cauer's partial fraction method; Darlington's driving point synthesis.

Cauer's Ladder development : Zero shifting and ladder developments of RC and LC networks, synthesis Real-imaginary part relationships of network functions, Magnitude phase relationships Synthesis procedure for Lattice networks, Bartlett's bisection theorem.

Lossless coupling network : lossless terminated networks, double terminated networks by Darlington's method.

Approximation problem : Use of Butterworth and Tscheby Scheff functions, Frequency transformations, Equiripple characteristics in both pass and stop bands. Fourier methods, Method based on semi-infinite slopes, Use of Potential theory analogues, Linear phase approximation.

Servomechanism and Automatic Control Devices

Description of a feedback control system. Application of Laplace's Transform to servomechanism problems. Requirements of stability and accuracy. Stability criteria and their application. Typical control elements and their transfer functions—potentiometers, synchros, servomotors, friction dampers, rotating amplifiers and hydraulic elements. Types of servomechanism and control systems. Block diagrams.

Servomechanisms error coefficients—static and dynamic complex plane representation of feedback control problem. Use of complex

plane plot to improve system performance—series and feedback methods of system stabilization. Attenuation concepts for use in system design and their application to design problems.

Multi—loop and multiple input feedback control systems. Comparison of steady state and transient performance. System synthesis.

Nonlinear systems—Describing function analysis, phase plane analysis.

Sampled data control systems.

Testing of Servomechanisms.

Advanced Microwave Engineering

Microwave Electronics: The nature of currents induced by electron motion at uhf. Transit time effects in tube. Uhf triode Oscillators—Resonatron and the disk seal tube, Oscillator analysis—Choice of tubes and circuits. Design. Stability considerations, output coupling methods, efficiency mode selection.

Properties of self-excited oscillators. The starting of an oscillation. Phasing of a selfexcited oscillator by an external signal.

Microwave Generators: Velocity modulated tubes or Kly strons bunching theory—nature of klystron cavity—the reflect klystron the two resonator klystron. Magnetron oscillators—Structural form of magnetrons—modes and modeseperation—space charge in Magnetrons—magnetron performance chart—Basic design relations—Typical magnetrons—tuning and stabilization.

Travelling wave tube—basic theory—general circuit considerations—equations for the travelling wave tue—Backward waves—Power output—double stream amplifiers.

Principles of Microwave Circuits: Wave guides as transmission line. General microwave circuit theorems. Wave guide circuit elements. Resonant cavities as microwave circuit elements. Wave guide junctions with several arms, mode transformations. Dielectrics in wave guides. The symmetry of wave guide junctions.

Waveguides and Resonators: The theory of resonant cavities. The cavity with several outputs, the cavity with two outputs, the cavity with one output and coupled cavities. The periodically loaded wave guide. Effects of obstacles in wave guides.

Uhf and Microwave Antennas: Cylindrical antennas, Slot antennas, Reflectors, Survey of microwave antennas, Circuit Relations.

Radiation, Scattering and diffraction of microwaves. Aperture illumination and antenna patterns. Microwave dipole antennas and feeds-waveguides and horn feeds.

Propagation and Relaying: Propagation of ultra-short waves, and the effect of obstacles. Service range. Microwave relay circuits and relay broadcasting. Theory of microwave propagation in a horizontally stratified, atmosphere. Tropospheric refraction. Atmospheric scattering and attenuation Reflection from the earth's surface. Meteorological echose.

Design and Construction of Electron Devices

I. Electron Tubes :

Emission of Electrons: Work function; energy level diagrams; emission, Types of cathodes—metal, monolayer, oxide coated, dispenser type. Theory of these cathodes. Richardson Dushman Law of emission and cathode parameters. Field emission.

Electron ballistics: Space—charge flow; Child's Law. Solutions for standard geometries; methods of solution in practical geometries—iterative methods and analogue methods. Design of electron guns. Flow of long electron beams. Limitation of theory. Retarding field flow.

Perfections of Triode: Conformal transformation of plane and cylindrical electrode geometries. Determination of u and gm empirical formulae. Current paths and current interceptions. Analogue-methods. Calculation of capacities, plate dissipation and cooling.

Gaseous Conduction: Ionization and conduction through gas. Plasma and sheath formation. Cathode considerations in gaseous devices. Grid control and recovery.

Photo conductivity.

High Vacuum Technique: Creation of vacuum-types of pumps. Gaseous flow at very low pressures. Measurement of vacuum-types of gauges. Vacuum systems. Vapour pressure and its effects on vacuum. Effects of various materials on vacuum Calculation and location of leaks. Joint making and gasketting. Movable joints. Gettering.

Properties of Common tube materials: Glass; ceramic; copper; nickel; tungsten; molybdenum; tantalum; nickel-iron alloys glass to metal seals; ceramics to metal seals.

Tube Construction: Preparation of various materials; mechanical cleaning; chemical cleaning, Vacuum and hydrogen firing furnaces.

Preparation of cathodes-metal, monolayer, oxide coated, dispenser. Parts assembly processes-glass sealing, welding of various materials; brazing. Tube processing after assembly-evacuation, baking, cathode activation. Selective heating of parts. Gettering and seal off.

II. Semi-Conductor Devices :

Preparation of semi-conductor materials : Raw materials-Germanium, Silicon and intermetallic compounds. Purification-zonal refining. Single crystal of rowing. Crystal pulling.

Methods of preparing p-n junctions Doping; Rategrowing junctions, Diffusion junctions; Fusion junctions; Surface junctions; multipole junction structures.

Metal and semi-conductor contacts.

Encapsulation : Physics of the diode transistor and photo cell useful in the device design. Application to the device design of High Frequency transistor Power transistor, Switching diode, Photo cell.

Appendix II

(Ref. Board of Studies in Engg. & Tech. Res. No. 2 of
Nov. 18, 1958)

Birla College of Engineering, Pilani

Estimate of remuneration to be paid for Practical Examiners

Particulars :

Examination	No. of Candi- dates.	No. of Sub- jects	Rate of Remune- ration.	Total Amount.
1. First B. E.	210	4	Re. 1.25	$210 \times 4 \times 2 \times 1.25$ Rs. 2,100/-
2. Second B. E.	210	6	„ 1.25	$210 \times 6 \times 2 \times 1.25$ Rs. 3,150/-
3. Third B. E. (Mech)	60	5	„ 1.50	$60 \times 5 \times 2 \times 1.50$ Rs. 900/-
„ B. E. (Elec)	60	5	„ 1.50	$60 \times 5 \times 2 \times 1.50$ Rs. 900/-
„ B. E. (Civil)	60	7	„ 1.50	$60 \times 7 \times 2 \times 1.50$ Rs. 1,260/-
„ B. E. (T. C.)	30	5	„ 1.50	$30 \times 5 \times 2 \times 1.50$ Rs. 450/-
4. Fourth B. E. (Mech)	60	4	„ 2.00	$60 \times 4 \times 2 \times 2.00$ Rs. 960/-
„ B. E. (Elec)	60	4	„ 2.00	$60 \times 4 \times 2 \times 2.00$ Rs. 960/-
„ B. E. (Civil)	60	7	„ 2.00	$60 \times 7 \times 2 \times 2.00$ Rs. 1,680/-
„ B. E. (T. C.)	30	4	„ 2.00	$30 \times 4 \times 2 \times 2.00$ Rs. 480/-
5. Final B. E. (Mech)	60	$4\left(\frac{L}{2} + \frac{D}{2}\right)$	$\frac{L}{2} 2.00$ $\frac{D}{2} 3.00$	$(60 \times 2 \times 2 \times 3.00 + 60 \times 2 \times 2 \times 2.00)$ Rs. 1,200/-
„ B. E. (Elec)	60	$4(2+2)$	„ 3.00	Do Rs. 1,200/-
„ B. E. (Civil)	60	$5(2+3)$	„ 3.00	$(60 \times 2 \times 2 \times 3.00 + 60 \times 2 \times 3 \times 3.00)$ Rs. 1,560/-
		1 (Pro- ject)	„ 10.00	$60 \times 1 \times 10.00$ Rs. 600/-
„ B. E. (T. C.)	30	$4(3+1)$	„ 3.00	$30 \times 4 \times 2 \times 3.00$ Rs. 600/-
6. Chairman of Board of Examiners	5x200			Rs. 1,000/-

Summary :

1st Year.	Rs. 2,100/-
2nd Year.	Rs. 3,150/-
3rd Year.	Rs. 3,510/-
4th Year.	Rs. 4,080/-
Final Year.	Rs. 5,160/-

Chairman. Rs. 1,000/-

Total Rs. 19,000/-

M. E. Qualifying Rs. 5/- per candidate per exam. } Minm. Rs. 50/- per Exam.

M. E. Final Rs. 5/- per candidate per exam. Minm. Rs. 75/- per Exam.

Qualifying 3 x 2 x 50 Rs. 300/-

Final 2 x 2 x 75 Rs. 300/-

Thesis 5 x 100 x 2 Rs. 1,000/-

Total	1,600/-
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B. E. Rs. 19,000/-

M. E. 1,600/-

Total	20,500/-
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Total Rs. 20,500/-

M. B. M. Engineering College, Jodhpur.

Examination.	No. of candidates.	No. of subjects	Rate of Remuneration	Total Amount.
First B. E.	175	4	1.25	175x4x1.25=875.00
Second B. E.	175	6	1.25	175x6x1.25=1312.50
Third B. E. (Civil)	90	7	1.50	90x7x1.5= 945.00
Fourth B. E. (Elec.)	30	5	1.50	30x5x1.5=225.00
Fourth B. E. (Mech.)	30	5	1.50	30x5x1.5=225.00
Fourth B. E. (Mining)	25	7	1.50	25x7x1.5=262.50
Fourth B. E. (Civil)	90	7	2.00	90x7x2=1530.00
—do—(Elect)	30	4	2.00	30x4x2=240.00
—do—(Mech)	30	4	2.00	30x4x2=240.00
—do—(Mining)	25	7	2.00	25x7x2=350.00
Final B. E. (Civil) & (Project)	90 L. D. 5+1 (2+3)		3.00	(90x3x3.00+90x2x2.00=1170.00
(Project)			+10.00	90x1x10=900.00
—do—(Elec.)	30 (2+2)4		3.00	(30x2x3.00+30x2x2.00)=300.00
—do—(Mech.)	30 (2+2)4		3.00	(30x2x3.00x30x2x2.00)=300.00
—do—(Mining)	25 (3+1)4		3.00	(25x3x2.00+25x3.00=225.00

Chairman of Board
of Exam.

5x200 =1000

=1000 00

9,100 00

Two Examiners for each Practical
except Project.

Less Project. 900.00

8200.00

Total $2 \times 8200 + 900 + 1000$

„ $16400 + 1900$

„ 18300

Total Rs. 18,300

Appendix III

(Ref. Board of Studies in Engg. & Tech, Res. No. 3
of Nov. 18, 1958)

Remuneration to Demonstrators, Clerks and class IV staff.
Practical Examinations Abstract.

Pilani				Jodhpur				
Students x Exam. No.				Students x Exam. No.				
I.	210	x	4	840	175	x	4	700
II.	210	x	6	1260	175	x	6	1050
III. M	60	x	5	300	30	x	5	150
E	60	x	5	300	30	x	5	150
T. C.	30	x	5	150	Mi. 25	x	7	175
C	60	x	7	420	90	x	7	630
IV. M	60	x	4	420	30	x	4	120
E	60	x	4	240	30	x	4	120
T. C.	30	x	4	120	Mi. 25	x	7	175
C	60	x	7	420	90	x	7	630
V. M	60	x	4	240	30	x	4	120
E	60	x	4	240	30	x	4	120
T. C.	30	x	4	120	Mi. 25	x	5	125
C	60	x	5	300	90	x	5	450

Rs. 4715/-

Total 5, 190 @ Re. 1/- per student per
Practical Exam. Rs. 5, 190/-

Grand Total 5190 plus 4715

=9905/-

say Rs. 10, 000/-

V. Lakshminarayanan

V. G. Garde

MINUTES OF A MEETING OF THE FACULTY OF
EDUCATION, HELD ON THURSDAY, THE 20TH
NOVEMBER, 1958, AT 1.00 P. M., AT THE
UNIVERSITY OFFICE, JAIPUR.

PRESENT :

Shri K. K. Chaturvedi, Dean (*in the Chair*).

2. Dr. J. N. Kaul
3. Shri K. K. Mookerjee
4. Shri R. K. Kaul
5. Shri P. L. Shrimali
6. Shri S. N. Srivastava
7. Dr. (Mrs.) Indu Dave
8. Shri M. R. Paliwal
9. Shri C. L. Bhardwaj
10. Dr. M. C. Singhal
11. Shri M. C. Sharma
12. Shri S. N. Tripathi
13. Dr. S. B. Adaval
14. Shri K. N. Srivastava
15. Dr. E. A. Pires

The minutes of the meeting of the Faculty of Education, held on the 30th January, 1958, were confirmed.

2. With reference to its Resolution No. 3 dated the 30th January, 1958, the Faculty considered the recommendation of the Board of Studies in Education as contained in its Resolution No. 5 of August 6, 1958, with regard to introduction of courses on Social Hygiene and Sex Education.

Resolved to recommend that the recommendation of the Board be accepted.

3. With reference to its Resolution No. 10 dated the 30th January, 1958, the Faculty considered the recommendation of the Board of Studies in Education as contained in its Resolu-

tion No. 7 of August 6, 1958 with regard to inclusion of Radio Education in the Study of General Methods of Education for the B. Ed. Examination of the University.

Resolved to recommend that the recommendation of the Board be accepted.

4. The Faculty considered letter No. 6080 dated the 27th September, 1958 received from Dr. J. N. Kaul, Principal, Basic Teachers' Training College, Gandhi Vidya Mandir, Sardarshar, containing his proposals for rationalising the syllabus of courses at the B. Ed. level (*vide Appendix A*).

Resolved that the important issues raised in the letter of Dr. J. N. Kaul be referred to a small ad-hoc committee consisting of the following 4 Principals of the Teachers' Training Colleges in Rajasthan and Dr. E. A. Pires, Central Institute of Education, New Delhi, for a thorough and detailed examination. The meeting of the ad-hoc Committee be convened by the Registrar in consultation with the Dean as soon as it can conveniently be arranged and the Committee be requested to frame the definite proposals on the concerned problem :

1. Shri P. L. Sharimali, Principal, V. B. G. S. Teachers' College, Udaipur.
2. Shri R. K. Kaul, Principal, Govt. Teachers' Training College, Ajmer.
3. Dr. J. N. Kaul, Principal, Basic Teachers' Training College, Gandhi Vidya Mandir, Sardarshahr.
4. Dr. E. A. Pires, Vice Principal, Central Institute of Education, New Delhi.
5. Shri K. K. Chaturvedi, Principal, Govt. Teachers' Training College, Bikaner (Dean of the Faculty) (Convener).

5. The Faculty considered the recommendations of the Board of Studies in Education as contained in its Resolution No. 4 of August 6, 1958, with regard to courses of studies and text books for the B. Ed. and M. Ed. Examinations of 1960 (*Vide Appendix B*).

Resolved to recommend that :

- (I) (a) Courses of study for the B.Ed. examination of 1959 be repeated for the Examination of 1960 with the following changes :—

In paper VI, the Special Method Course in Experimental Education be replaced by the Special Method Course in 'Measurement and Evaluation' as given in Appendix III to the minutes of the meeting of the Board of Studies.

- (b) Special Method Course in Experimental Psychology be added to the existing courses. Shri S. N. Tripathi, V. B. G. S. Training College, Udaipur be requested to formulate the syllabus for this course which may be placed at the next meeting of the Board of Studies.

- (c) The following Special Method Courses be also added :

- i) Audio Visual Education.
- ii) School Library Organisation.
- iii) Education & Vocational Guidance
- iv) Pre-School Education.
- v) Music Education.

The Syllabi for these courses given in appendices Nos. III, IV, V, VI and VIII of the Board of Studies in Education dated the 6th August, 1958 be approved with the following minor corrections and changes :

Appendix III—In the list of books recommended add "Evolution in Secondary Schools by Dr. Bloom. Published by the All India Council for Secondary Education".

Appendix IV—Part II—Sessional Work. At No. 1 the words "Preparation of Graded Reading Tests" be replaced by the words "Gradation of Reading Material".

In the list of books recommended, add "School Library Organisation by Dr. Vishvanathan".

Appendix V—At No. 7 under part I, the words "means of studying the individual" be replaced by the words "tools used for such Study".

In the list of books recommended add the following four books [names suggested by Dr. (Mrs.) Indu Dave] :

1. Erickson, Smith & Roebers : Organisation and Administration of Guidance Services.
2. ASCD, 1955 year Book : Guidance and Curriculum.
3. Hamrin, Shirley : Initiating and Administering Guidance Services.
4. Cronback Lee : Essentials of Psychological Testing.

Appendix VI—Under Part I (Theory), at No. 5, the word 'some' be replaced by the word 'child', and at No. 6 add the words "at the Pre-school Stage" at the end of the sentence.

(d) The syllabus drawn up for the proposed Special Method Course in Backward and Gifted Children shown at Appendix VII be referred back to the Board of Studies for re-consideration and necessary modifications.

(e) In the syllabus of Paper I for the B. Ed. examination add "Principles of Guidance" as item No. 6 on page 17.

(f) The Board of Studies be requested to consider the desirability and feasibility of including "Guidance in the School Programme" in the syllabus of Paper V "Educational Administration and School Hygiene" for the B. Ed. Examination.

II. Courses in Music Education under section 2 of Paper IV drawn up by the Convener of the Board of Studies be accepted (*vide Appendix C*).

III. The Courses of Study for M. Ed. examination of 1959 be repeated for the M. Ed. Examination of 1960, with changes as recommended by the Board of Studies in Education, except the proposal of the Board of Studies regarding change on page 65 of the Syllabus, 1958 Edition that under Part II, Class I—60% may be replaced by 65%. It was resolved that this be referred back to the Board of Studies in Education to reconsider the same in the light of the information from other Universities etc. and the Registrar be requested to get information regarding the practice followed in training colleges of other Universities and in other Departments (Faculties) of this University and place before the next meeting of the Board of Studies.

6. With reference to its Resolution No. 11 dated the 30th January, 1958 the Faculty considered the recommendation of the Board of Studies in Education as contained in its Resolution No. 8 of August 6, 1958, to the effect that such candidates, as did not offer a special paper at the time of appearing at the B. Ed. Examination and wished to appear in the same in a subsequent year should be required to appear in practical examination also and give a lesson in the subject of the Special Paper, irrespective of their having passed the Practical part of the B. Ed. examination previously in the second division, together with the detailed proposals made by Shri K. K. Chaturvedi (*Vide Appendix D*).

Resolved that the question be referred for fuller and more detailed consideration to an ad-hoc Committee appointed under foregoing Res No. 4.

7. With reference to Academic Council Res. No. 33 dated the 29th October, 1958, the Faculty considered the recommendation of the Faculty of Science as contained in its Resolution No. 6 of the 24th January, 1958 to the effect that a student who has offered thesis at the M. Sc. (Final) examination and has failed, must submit a thesis on a fresh subject when he re-appears at the examination.

Resolved to recommend that this Faculty does not agree with the recommendation of the Faculty of Science in this respect.

K. K. Chaturvedi

Dean.

APPENDIX A

(Ref. Fac. of Education Res. No. 4 of November 20, 1958)

Copy of letter No. 6030 dated the 27th September 1958, from Dr. J. N. Kaul, Principal, Basic Teachers Training College, Sardarshahr to the Registrar, University of Rajasthan, Jaipur.

Sub :—Some suggestions for the consideration of the Faculty of Education.

I would like to place before you and the Faculty of Education University of Rajasthan, the following proposals for rationalizing the syllabus of courses at the B. Ed. level.

1. Implementations of the suggestions contained in the report of the Committee appointed by the Ministry of Education (Convenor, Dr. E. A. Pires) to examine the Syllabi of teachers' training colleges in India.
2. Rationalizing the system of Practical examinations of the candidates appearing at the B. Ed. examination, with specialization in Basic Education : As at present, candidates have to cook up 'Activities' for the final practical lesson; even so, the examiners do not have enough time to see a correlated lesson through.

The result is a *hotch-potch* of basic and traditional lessons which defeats the spirit of Basic Education and the purpose of the examination. It is for consideration if the final award in the practical of the Basic lesson should not be based largely on the sessional and Practical teaching work of the candidates.

3. Rationalizing the system of practical examination of the candidates appearing at the B. Ed. examination. The *Sine quo Non* of any good examination system is the uniformity of the marking standards. We might consider the scheme practised in Madras or alternatively, set up a Board of external examiners consisting of the Principals of the existing training colleges and one or two outsiders who would examine the candidates at every centre.

Further, the weightage to be given to (a) the sessional work of candidates and (b) the award of the concerned principal have to be determined in precise detail.

4. A place for internal assessment in theory papers at the B. Ed. level : As at present, the final examination in theory papers

encourages rote memory and uneven work. It is for consideration if at least 25% marks should not be allotted for sessional work in each theory paper.

5. *Increasing the duration of the Basic Specialization Course (B. Ed. examination) to at least four and a half months :* Our experience shows that the present two months course is merely a device to get the Basic stamp of the University. Period of two months is too short for learning-sufficient to teach others-of two crafts and of the technique of correlated teaching. Even full-session candidates find it hard to master the prescribed course. The Basic Specialization Course may either be extended to four and a half months or abolished altogether.

I request the favour of your kindly taking all necessary action in this regard so that the decisions arrived at may be implemented as soon as possible.

Thanking you.

Appendix B

(Ref. Fac. of Education Res. No. 5 of November 20, 1958)

Minutes of a meeting of the Board of Studies in Education, held on Wednesday the 6th August, 1958, at 1-00 p. m., at the University Office, Jaipur.

Present :

1. Shri P. S. Naidu
2. Shri K. K. Chaturvedi
3. Shri K. N. Srivastava
4. Shri P. L. Shrivastava (*Convener*)

1. Under Section 34 (4) (iv) of the University Act, Shri P. S. Naidu was elected as a member to serve on the Committee for selection of examiners in Education.

2. The Board scrutinised the statement of qualifications and teaching experience etc. of teachers (received from affiliated institutions and other Universities) and revised the panel of examiners for 1958-59.

3. The Board perused the reports of examiners and the question papers set for the examinations of 1958 and observed that the resolution passed by this Board last year has not been given effect to with regards to circulation of reports of examiners to the members.

Resolved to recommend that the copies of the reports of the examiners and question papers be sent to the members along with the agenda papers for the meeting of the Board of Studies. In this connection the Board considered the copy of the letter dated the 26th April, 1958 from Shri L. K. Oad, Lecturer in History of Education, Vidya Bhawan Govind Ram Seksaria Teachers' Training College, Udaipur, addressed to the Principal, V. B. G. R. S. Teachers' Training College, Udaipur and forwarded to the Registrar, University of Rajasthan, Jaipur. The Board agreed to the observations made by Shri Oad.

(Vide Appendix I).

4. With reference to its Res. No. 7 of 27th October, 1957, the Board considered the proposals with regard to the introduction of the following two additional optional courses under Paper VI—Special Method Course—for B. Ed. Examinations and the Courses of Study for the B. Ed. and M. Ed. Examination of 1960.

1. Audio Visual Education.
2. Library Science.

Resolved to recommend that :

- (i) The courses of study for the B. Ed. Examination of 1959 be repeated for the examination of 1960 with the following changes:—
 - (a) *In paper VI*: "Special Method Course in Experimental Education" be replaced by the "Special Method Course in Measurement and Evaluation". (*Vide Appendix II*).
 - (b) *In paper VI*: The following Special Method Courses be added:—
 - (a) Special Method Course in Audio Visual Education.
 - (b) Special Method Course in School Library Organisation.
 - (c) Special Method Course in Educational and Vocational Guidance.
 - (d) Special Method Course in Pre-School Education.
 - (e) Special Method Course in Backward and Gifted Children.
 - (f) Special Method Course in Music Education.
(*Vide Appendixes III, IV, V, VI, VII & VIII*).
- (ii) The Convener of the Board of Studies be requested to prepare the courses in Music Education under Section 2 of Paper IV and present it to the Faculty at its next meeting.
- (iii) The courses for the study of M. Ed. examination of 1959 be repeated for the M. Ed. Examination of 1960 with the following changes:—

Page 69—Under Paper II—Section 2—Sessional Work—Add
"No. 4 Aptitude test" after No. 3.

Page 65—Part II—Class I—
60% be replaced by 65%.

„ —Note 2—Line 4—The maximum marks should
be 100 instead of 75 marks.

„ 66 —Note 3—Line 2—The words "by the examiner of
the paper concerned" be replaced
by the words "by the external
examiner".

5. With reference to the Faculty of Education Res. No. 3, dated the 30th January, 1958, the Board considered the proposals of the Convener,

Board of Studies in Education regarding introduction of Courses on Social Hygiene and Sex Education in the curricula for the B. Ed. examination.

Resolved to recommend that the course in Social and Moral Hygiene be introduced in the curricula for the B. Ed. Examination as a non-examination course as proposed by the Convener.

(Vide Appendix IX).

6. With reference to Academic Council Res. No. 43, dated the 29th October, 1957 referring back to the Faculty of Education the following recommendation made by it at its meeting held on the 21st January, 1957 for reconsideration, the Board considered the same vide Faculty Res. No. 9, dated the 30th January, 1958:—

“(a) A candidate who fails both in theory and practice at the B. Ed. Examination be not considered eligible to appear again at any subsequent examination without keeping full term”.

Resolved to recommend that the Registrar be requested to obtain information regarding practice observed in this connection in other Universities and circulate the same to the members of the Board of Studies.

7. With reference to the Faculty of Education Res. No. 10 of 30th January, 1958, the Board considered letter No. 3-35/P3/57, dated the 16th January, 1958 from the Chief Producer of Educational Programme, Directorate-General, All India Radio, Broadcasting House, Parliament Street, New Delhi, suggesting that Radio Education be included in the study of General Methods of Education for the B. Ed. Examination of the University.

Resolved to recommend that “Radio & School Broadcast” be substituted for ‘Radio etc.’ in line 3—Item 4 page 23 of the prospectus, The matter in parenthesis should read as follows:—

(Narration, description, explanation, group studies and debates etc. Radio and School Broadcast).

8. With reference to the Faculty of Education Res. No. 11 of 30th January, 1958, the Board considered whether such candidates as did not offer a special paper at the time of appearing at the B. Ed. examination and wish to appear in the same in a subsequent year, should be required to appear in a practical examination also and give a lesson in the subject of the Special Paper, irrespective of their having passed the Practical part of the B. Ed. Examination previously in the second division,

together with the opinion of the Dean to whom the question was referred.

Resolved to recommend that a separate practical test, which may take the form of examination, lesson or some field work according to the nature of the subject be held under Paper VI—Special Method Course for the candidates who may be offering special paper at the time of appearing at the B. Ed Examination or wish to appear in the same in a subsequent year. Shri K. K. Chaturvedi be requested to make detailed proposals in regard to this resolution and submit the same at the next meeting of the Faculty of Education.

9. The Board considered letter No. F. 18-150/56-D. 8, dated the 20th May 1958 from the Deputy Educational Adviser to the Government of India, Ministry of Education, New Delhi together with a draft revised syllabus for Secondary Teachers' Training and a list of books by Indian authors of those published in India recommended by a committee appointed by the Government of India in 1956 and considered by the Conference of Principals of Training Colleges held at Bangalore in June, 1957.

Resolved to recommend that the draft revised syllabus and list of books by Indian authors etc, as received from the Ministry of Education, be circulated among the members of the Board of Studies to be considered at the next meeting of the Board. In the meantime, the Registrar be requested to contact the other Universities with a view to find out the decision, which the Principals of Teachers, Training Colleges and Heads of Departments of Education in their affiliated institutions are contemplating to take on the basis of this report.

P. L. Shrimali
Convener.

Appendix I

(*Ref. Board of Studies in Education Res. No. 3 of August 6, 1958*).

Copy of letter dated the 26th April, 1958 from Shri L. K. Oad, Lecturer in History of Education, Vidya Bhawan G.S. Teachers' College, Udaipur, addressed to the Principal, Vidya Bhawan G. S. Teachers' College, Udaipur and forwarded to the Registrar, University of Rajasthan, Jaipur.

Kindly allow me to make the following observations about question Paper III (History of Education) for the B. Ed. Examination 1958 of Rajasthan University :—

1. It appears that the paper setter did not keep the prescribed syllabus in view while setting the question paper. Fifty per cent of questions are out of course, e. g.,
 - (a) Question no. 1 and its alternative question comes under the Philosophy of Education, and ought not have been asked in this paper.
 - (b) In question no. 4 the problems of education of the blind and handicapped or the mentally deficient children are out of course.
 - (c) In question no 9, (short notes) a, b, c & f are not in the course. John Locke, Herbert, Spencer, and Renaissance period are not in the course.
2. Most of the questions are very lengthy, e. g.,
 - (a) In question no. 8, the History of University Education from the beginning upto 1958 has to be traced.
 - (b) In question No. 5, the experiments of three institutions viz. Shantiniketan, Jamia Millia and Moga have been asked.
 - (c) In question No. 3 the influence of four great events in the History of Education, namely Montagu-Chelmsford Reforms, Macaulay's Minutes, Wardha Scheme and Sargent Scheme, have been asked.
 - (d) In question no. 9, four short notes have to be written.
3. Some questions are beyond the capacity and ability of students of B. Ed. standard, e. g.,
 - (a) In question no. 6 the psychology of occupation has been asked, or the pupils are required to comment on the two original works of Dewey.

- (b) In question no. 2, a comparison between the ancient ideals of education and those laid down in the First and Second Five Year Plans has to be drawn. I think it is a problem of research.

Will you kindly forward these observations to the Registrar, for necessary action.

Appendix II

(Ref. B. O. S. in Education Res. No. 4 (i) (a) of August 6, 1958).

Special Method Course in Measurement and Evaluation.

Part I—Theoretical.

1. Meaning of Evaluation.
2. The relation between Educational Objectives and Evaluation.
3. Techniques of evaluation and their uses.
 - (a) Essay examination : how to improve it.
 - (b) Objective examination : different types of questions.
4. Testing of the following :
 - i. Skills.
 - ii. Knowledge.
 - iii. Understanding.
 - iv. Applications.
 - v. Appreciations.
 - vi. Attitudes.
 - vii. Interests.
 - viii. Personality evaluation.
 - ix. Problem solving ability.
5. Constructing achievement tests.
6. Concept of reliability and validity.
7. Elementary statistical methods.
8. Item analysis.

Part II—Sessional Work

Construction of an achievement test in any one school subject; its administration and item analysis.

Books recommended :

1. J. R. Gerberich : Specimen Objective Test Items.
(Longmans, Green & Co., 1956).
2. Green, Jorgenson and Gerberich: Measurement and Evaluation
in Secondary School.
3. Ross and Stanley : Measurement in Today's School.
(Prentice Hall, 3rd Edn.).
4. Anastasi : Psychological Testing.
(Macmillan Co. N. Y.).

Appendix III

Special Method Course in Audio Visual Education,

Part I—Theory :

- I.
 1. Communication in the modern world.
 - (a) The Social significance of communication.
 - (b) Analysis of languages, media and forms of communications.
 - (c) The development of various forms of communication and their application to education.
 - (d) Changing curricula—New tools of teaching and learning.
 2. Psychology of learning, attention, interest. Audio Visual Aids as an instrument in overcoming some barriers to teaching.
 3. Audio Visual Aids as a means for mass education.
- II.
 1. Types of Audio Visual materials available and their potential educational worth and uses.
 2. Principles of good teaching that affect the selection and use of these materials.
 3. Processes involved in the use of production of some of the simpler materials such as mounted prints, hand made slides, films strips and photographs.
 4. Integration with the school curriculum.
- III.
 1. Principles governing administration of Audio Visual materials.
 2. Practice's in the Administration of Audio Visual materials.
 3. Evaluating Audio Visual materials available.
 4. Sources of the availability of Audio Visual Aids.
 5. Organizing the use of Audio Visual Aids.
- IV.
 1. School Broadcasting—educational value, organization and appreciation.

Part II—Sessional Work

1. Construction of teaching units through Audio Visual Aids in school subjects.
2. To assemble and operate various kinds of equipment and to perform simple operations.

3. Preparation of hand books for using certain films, film strips, etc.
4. Preparation of charts, models and collecting specimens.

Books recommended :

1. Audio Visual Materials : by Wittich and Schuller.
2. Preparation and use of Audio Visual Aids : by Haas and Parker.
3. Audio Visual Methods in teaching : By Edger Dale.

Appendix IV

(b) Special Method Course in School Library Organization.

Part I—Theoretical

1. The Library in Education.
2. The school library: Its aims and objectives; the place of library in a modern school.
3. Planning a school library.
4. Organization and routine of school library,
5. School library administration.
6. Selecting books and journals for the library.
7. Classification and cataloguing.
8. Issue methods.
9. Reference Service.
10. Guidance in library study.
11. Supervise study.
12. Class libraries.
13. Special problems of school libraries.

Part II—Sessional work

1. Preparation of graded reading tests.
2. Classification of books.
3. Supervised study as a part of practice teaching.
4. Study of children's reading interests and preparation of a report thereof.

Books recommended :

1. R. G. Ralph : The Library in Education.
2. S. R. Ranganathan : Suggestions for the organization of libraries in India.
3. Sears : Cataloguing.
4. Vishva Nathan : Cataloguing.
5. Harrison : First Step in Librarianship.
6. Vimal Kumar Dutta : A Guide to Library Science.
7. Ranganathan : Classification and Reference work.
8. Dewey : Decimal classification (17th Edn.).

9. Ranganathan : Classified catalogue Code.
10. Ranganathan : Sundram : Reference Service & Bibliography.
11. Ingles, May & Mc Cague: Teaching the Use of Books &
Libraries. (H. W. Wilson Co.,
New York.)
12. Fargo, L. F. : The Library in the School.
(American Library Association, Chicago).

Appendix V

(c) Special Method Course in Educational & Vocational Guidance

Part I

1. Importance of Guidance in the lives of Individuals.
2. Developmental concepts of guidance; Meaning of Guidance.
3. Philosophy and Aims of Guidance.
4. Education and Guidance : Democracy and Guidance. Individual Differences and Guidance.
5. Guidance implications of the current Indian Scene.
6. Importance of Occupational and Environmental Information.
7. Study of the Individual : a basic introduction to the guidance means of studying the individual.
8. Introduction to Guidance Services.
9. Guidance in the School Programme.

Part II—Sessional Work

1. Four Essays in the field of guidance.
2. Developing one tool for guidance purposes.
3. Compilation of information on two occupations.

Books recommended :

- | | |
|---|---|
| 1. Erickson, Clifford E. | A Basic Text for Guidance Workers.
New York, Prentice Hall, Inc. 1947. |
| 2. Froelich, Filford P. | Guidance Services in smaller Schools.
New York, McGraw-Hill Book Co.,
1950. |
| 3. Strang, Ruth : | The Role of Teacher in Personnel
Work. New York, Teachers College,
Columbia University, 1953. |
| 4. Humphreys, Anthony
J. & Arthur S. Traxler : | Guidance Services, Chicago Science
Research Associates, Inc., 1954. |
| 5. Super, Donald : | Appraising Vocational Fitness.
New York, Harper and Brothers,
1949. |

Appendix VI

(d) Special Method Course in Pre-School Education.

Part I—Theory :

1. The contribution of Rousseau, Pestalozzi, Froebel, Montessori in regard to the Principles and methods of child study.
2. Psychology of childhood with special reference to motivation, interest and attention in child learning and development of movement and language at this stage.
3. Play and its importance, discipline and freedom for younger children.
4. Self activity, continuity, connectedness and creativeness as guiding principles in early childhood.
5. Apparatus and aids used in some training with their values and limitations in pre school education.
6. Aims and objectives of Child education.
7. Short history of Montessori Movement, kindergarten and pre-school education with special reference to India.
8. Tests, records and evaluation in Pre-primary classes.
9. Place of action songs, story telling, drawing and painting in early child hood.
10. Organisation and administration of Nursery School.

Part II—Sessional Work :

1. Preparation of a cumulative record file for Nursery children.
2. Preparation of a observation book and progress file with methods of studying free drawing, spontaneous speech and activity of children.
3. Preparation of a material book with ten action songs, five stories, and five folk games.
4. Fifteen hours practical teaching in a Nursery school with observation notes on 15 children.

Books recommended :

1. Maria Montessori : Montessori Method .
2. Cliver A. Wheeler : Nursery school Education in re-organization of the infant school.

3. Frank, Golden Son : Understanding children play.
4. Milny & Almy : Psychology of Child Development.

Books for reference :

1. Kilpatric : Fundamental of child study.
2. Frobeal : Education by Developing Mind.
3. L. Laura : Plated Early Education of childhood.
4. Miss Mackenzie : The Principles and Practices of Kindergarden.
5. Josephine C. Foster : Nursery School Education.

Appendix VII

(c) Special Method Course in Backward and Gifted Children.

Part I—Theoretical :

1. The field of social education, guiding principles of special education.
2. Education of children with low I. Q. aims; teachers; curriculum; method of teaching; placement and follow up.
3. Education of children with high I. Q. Special problems of gifted children; the desirability of special class; teachers; curriculum; method of teaching; follow up.
4. Education of specially gifted children; definition; problems involved.
5. Diagnostic and Remedial teaching of reading; locating the poor readers; discovering the causes; procedures; for remedial treatment.
6. Diagnostic and Remedial testing of arithmetic; diagnostic tests in arithmetic; causes of difficulty in arithmetic; remedial exercises.

Part II—Sessional Work :

1. Administration of group intelligence test to discover dull and gifted children.
2. Administration of individual intelligence test to gifted and backward children
3. Administration of a diagnostic test to backward students.
4. Remedial teaching of a few backward students and evaluation of the results achieved. At least fifteen lessons are to be delivered.
5. Case study of a backward or a gifted child.

Books recommended .

1. Arch O. Heck : The Education of Exceptional Children.
(Mc Graw Hill 1953).
2. Shonell : Diagnostic and Attainment testing.
(Oliver and Boyd).
3. K. C. Garrison : The Psychology of Exceptional Children.
(Ronald Press, N. Y. 1950).

4. Cyril Burt : The Backward Child. (Appleton Century Crofts N. Y., 1937).
5. Kirk and Johnson : Educating the Retarded Child. (Houghton Mifflin Co., Boston 1951).
6. Cyril Burt : The Subnormal Mind. (Oxford University Press 1955).
7. Glenn Myers Blair : Diagnostic and Remedial Teaching. (Macmillan 1950).

Appendix VIII

(f) Special Method Course in Music Education.

Part I

1. Aims and values of music :
 - (i) With particular reference to values of teaching music in schools.
 - (ii) Music as a typical representation of Indian Culture.
2. Developmental history of Music :
 - (i) Origin of music relation to religion.
 - (ii) Samveda and music.
 - (iii) Muslim influence.
 - (iv) Causes of downfall.
 - (v) Western influence, similarities and differences between Eastern and Western music.
 - (vi) Rejuvenation of Indian classical music; a critical appraisal of the means adopted for the rejuvenation.
 - (vii) Northern and Southern styles of music.
3. Teaching of Music :
 - (i) Qualifications of the music teacher.
 - (ii) Methods and techniques of teaching of music.
 - (iii) Singing without reading notations.
 - (iv) Spontaneity of expression.
 - (v) Place of technical details.
 - (vi) Equipment and site of the music room.
4. Correlation of music with other school subjects especially dancing and poetry.

Part II—Sessional work

1. Four essays in the field.
2. Preparation of notations of 10 songs to be taught at various school stages.

This work will include:

- (i) Selection of appropriate songs.
- (ii) Selection of Raga and Tala for each song; the reasons for Selection; description of each Raga and Tala.

(iii) Making notations.

(iv) Practical, singing the notations with Swara and Tala.

Books recommended :

1. Pranava Bharati—Pt. Omkarnath Thakur.
2. Theory of Indian Music by B. Swarup.
3. Sangit Balbodh (5 parts) by Pt. Vishnu Digambar.
4. Sangit—Darpana (Sanskrit).
5. Sangeet—Ratnakar (Sanskrit).
6. Hindustani Sangeet Padhati by Bhatkhande.
7. Sangeet—Praveshika by S. N. Basu.
8. Sangeetanjali by Pt. Omkarnath Thakur.
9. UNESCO—Music in Education—1955.
10. Set of records in teaching music.
11. Uttar Bahrtiya Sangeet ka Itihās—Bhatkhande, Sangeet
Ka yalaya, Hathras, U. P.
12. Sangeet—monthly „ „ „ „

Note : 10 extra lessons to be given in music.

Appendix IX

Proposed Course in Moral and Social Hygiene

1. The course should be treated as a non-examination course. The head of the institution should certify that the candidate has attended the course in Moral and Social Hygiene.

2. Content of the course :

(i) Biology of sex.

(ii) Psychology of Sex.

(iii) Sociology of sex.

(iv) The study of moral lapses as prevailing in our modern Society and means to remedy them.

(v) Marriage and family.

(vi) Methods of imparting sex education to children.

3. Organization of the course :

Considering the social norms prevailing in our Society, it is suggested that instructions should be separately arranged for men and women. A doctor may be invited to give lectures on the biological part of the course.

The course may roughly be covered in about ten lectures.

Books recommended :

1. Bibby : Sex Education (Macmillan).
2. Kirkendall : Sex Education (Inor Publishing N. Y. 1950).
3. Outline for Instruction in Moral and Social Hygiene—
By Indian Association of Moral and Social Hygiene.

APPENDIX C

(Ref. Faculty of Education Res. No. 5 (II) of Nov. 20, 1958)

Course in Music Education.

Paper IV—Sec. II

Teaching of Music :

1. Values and aims of teaching music.
2. Place of music in the school curriculum.
3. Appreciation of music : ways and methods to develop the appreciation in students.
4. Psychology of music.
5. Qualifications and qualities of the music teacher.
6. Methods and techniques of teaching music.
 - (a) Singing without reading notations.
 - (b) Reading notations in music.
 - (c) Spontaneity of expression.
 - (d) Place of technical details.
7. Equipment and site of the music room.
8. Correlation of music with other school subjects.
9. Place of folk and local music in music education.

Books recommended :

- | | | |
|-------------------------|---|------------------------------|
| 1. B. Swarup | : | Theory of Indian music. |
| 2. Sambamurthy | : | Teaching of Music. |
| 3. Pt. Omkarnath Thakur | : | Pranava Bharati. |
| 4. Percy, C. Buck | : | Psychology for musicians. |
| 5. Bhatkhande | : | Hindustani Sangeet Padhasti. |
| 6. UNESCO | : | Music in Education. |

APPENDIX D

(*Ref. Faculty of Education Res. No. 6 of November 20, 1958*).

Detailed proposals in regard to Resolution No. 8 of the Board of Studies in Education passed at its meeting held on the 6th August, 1958 asked for vide Registrar's letter No. 41311 dated 3.9. 1958 and to be placed before the next meeting of the Faculty of Education to be held on 20th November, 1958.

Proposed that in Resolution 43 of the printed "Ordinances, Regulations, Text Books and Syllabuses of the Faculty of Education, outlining the scheme of Examination for B. Ed. Course, the following be substituted under the sub-heading "Special Paper".

This paper will comprise the contents as well as the Methods of teaching the special subject. Questions on this paper will be designed to test the candidates' knowledge of the subject matter as well as his ability to teach that subject.

The paper will consist of 200 marks : 100 marks for the theoretical part; and 100 marks for the practical part, which will include 50 marks for sessional work and 50 marks for a practical test. The practical test may take the form of an examination-lesson or some field work, according to the nature of the subject. Qualifying marks in this paper will be 40% in the theoretical and 50% in the practical parts. The Practical Test will take the form of an examination-lesson in all subjects, except the following four-in which it will be in the form of field work. (1) Measurement & Evaluation (Field work of suitable nature e.g. administering a test). (2) Audio-Visual Education—(Field work e.g. preparation or use of audio-visual aids). (3) School Library Organisation. (Field work, e.g. actual cataloguing problem). (4) Educational & Vocational Guidance (Field work, e.g. administering aptitude tests).

Note :—(1) The result in the special paper will have no relation to the result in the B Ed. examination. But for a pass in the special paper, pass in the B. Ed. Examination would be an essential pre-requisite.

(2) A candidate who fails in the special paper may be allowed to appear in the next examination after keeping terms for at least two months at an affiliated teachers college. No candidate will be allowed more

than two chances to appear in the Examination of the special paper in the same subject. Change of the subject of the special paper will, however, be permissible in subsequent years.

K. K. Chaturvedi
Dean.

MINUTES OF A MEETING OF THE FACULTY OF
MEDICINE, PHARMACEUTICS AND VET.
SCIENCE HELD ON THURSDAY THE 20TH
NOVEMBER, 1958 AT 1.00 P.M AT THE
UNIVERSITY OFFICE, JAIPUR.

PRESENT :

1. Dr. R. M. Kasliwal
(*In the Chair*)
2. Dr. B. C. Sharma
3. Dr. D. K. Santra
4. Dr. S. S. Mathur
5. Shri M. L. Schroff
6. Shri K. K. Vyas
7. Dr. B. K. Soni
8. Dr. Mohan Singh
9. Dr. R. K. Goyal
10. Dr. R. P. Chaturvedi
11. Dr. V. N. Sharma
12. Dr. B. S. Kahli.

As no one was holding the post of Dean, Dr. R. M. Kasliwal was unanimously suggested to take the Chair.

1. The minutes of the meeting of the Faculty of Medicine, Pharmaceutics and Veterinary Science held on the 30th January, 1958 were confirmed, with the following modifications :—

- i) *Ref. Res. No. 2*—As suggested by Dr. M. L. Schroff in his letter dated the 7th March 1958
—Delete the last sentences and add in its place the following after 'Pharmacy'
"for rectifications in the light of the observations made by Shri M. L. Schroff on various points to the Convener of the Committee."

ii) *Ref. Res. No. 3*—A note be given (as below) under Ordinance 27b — G —

N. B.—Since B. Pharm. Candidates may not be able to complete the standard for the M. Sc. (Med.) examination in Pharmacology and Therapeutics, for two years (out of three year's regular course of study) they should have special training in Pharmacology and Therapeutics."

iii) *Ref. Res. No. 5*—The rules regarding proportionate pooling of theory marks be applicable for all the M. B., B. S. examinations with effect from the Examinations of 1960 instead of 1959."

2. The Faculty appointed Dr. V. N. Sharma, Head of the Department of Pharmacology, S. M. S. Medical College, Jaipur as a member on the Board of Studies in Medicine on a seat kept vacant by the Faculty vide its Resolution No. 2 of August 31, 1957.

3. The Faculty appointed Dr. B. N. Handa, Principal, Rajasthan College of Vet. Science & Animal Husbandry, Bikaner as a member on the Committee of Courses in Veterinary Science and Animal Husbandry for the residue of the term of Lt. Col. A. C. Aggarwala (ceased).

4. With reference to its Res. No. 4 of 30th January 1958, the Faculty considered the recommendation of the Board of Studies in Medicine as contained in its Res. No. 1, dated the 5th August 1958 with regard to defining the functions and duties of the Committee of Post-graduate Medical Education and Research.

Resolved to recommend that the recommendations of the Board of Studies in Medicine be approved. The Faculty was, however, of the view that in order to implement these recommendations it will be desirable to hold the meetings of this Committee more frequently.

5. The Faculty considered the recommendation of the Board of Studies in Medicine as contained in its Res. No. 2 of 5th August, 1958 regarding implementation of the recommendations made by the Conference on Under-Graduate Medical Education convened by the Ministry of Health, Government of India, in November 1955 (Printed on Page 328, Vol XX of the minutes).

Resolved to recommend that the recommendation of the Board of Studies in Medicine be approved and these recommendations be referred to the Government of Rajasthan and administrative authorities of the Medical College, Jaipur for implementation.

6. The Faculty considered the recommendations of the Board of Studies in Medicine as contained in its Res. No. 6 of 5th August, 1958, with regard to the courses of study in Medicine for the First, Second and Final M. B., B. S. examinations of 1961 1963 and 1964 respectively together with the recommendations of the Committee of Courses in Post-graduate Medical Education and Research regarding the M. D., M. S. and M. Sc. (Med.) examinations (*Vide Appendix A*).

Resolved to recommend that the recommendations of the Board of Studies in Medicine as contained in its Res. No. 6 of 5th August, 1958, be approved.

7. The Faculty considered Res. No. 7 dated the 5th August, 1958 of the Board of Studies in Medicine on the question of recognition of the Mahatma Gandhi Hospital, Jodhpur.

Resolved to recommend that the Mahatma Gandhi Hospital, Jodhpur be recognised for the purpose of training of fresh medical graduates as interneers. The Principal Medical Officer, Jodhpur and Director of Medical & Health Services, Jaipur be informed accordingly.

8. The Faculty considered the recommendation of the Board of Studies in Medicine as contained in its Res. No. 8 dated the 5th August, 1958 to the effect that for candidates failing in April examinations in the 1st M. B., B. S. Examination, a supplementary examination be held in July.

Resolved to recommend that if a candidate failed in one subject in the 1st M. B., B. S. Examination, he be allowed to appear only in that subject in the following July supplementary examinations and if he failed to pass in that subject in July examination, he be required to appear in the full subjects in April examination. There will thus be no October exam. for the I. M. B., B. S. This be brought into effect from the examinations of 1951, O. 272 be deleted and consequential amendments be made in the relative ordinances.

9. The Faculty considered the recommendations of the Committee of Courses in Veterinary Science and Animal Husbandry (*Vide Appendix B*) as contained in its Res. Nos. 2 & 5 of August 6, 1958 with regard to the courses of study for the B. V. Sc. & A. H. Examinations of 1960.

Resolved to recommend that the Model Syllabus for the Veterinary Degree Course as contained in the recommendations of the Special Conference of the Principals of all the Veterinary colleges in India be approved. But since the consequential changes have to be made in the courses and Ordinances have to be amended in the light of the same, these may be referred back to the Committee of Courses in Veterinary Science and Animal Husbandry for their definite recommendations. In the meantime the present courses be repeated for the examinations of 1960.

10. The Faculty considered the recommendations of the Committee of courses in Pharmacy (*vide Appendix C*) made at its meeting held on the 6th August, 1958.

Resolved to recommend that the recommendations of the Committee of courses in Pharmacy be approved. The Convener of the Committee of courses be asked to incorporate all the consequential changes and upto date Ordinances etc. in respect of these courses to be put up before the next meeting of the Academic Council.

11. The Faculty considered the question of amending the present Ordinances 299M (e) (i) by adding the following sentence at the end of the first para, so as to give the candidates two chances to clear out in a subject instead of allowing one chance as at present

& changing the last para as suggested by the Principal, Veterinary Science College, Bikaner :

Resolved to recommend that the following be added at the end of the first para of O. 295M (e) (i) :—

"Provided that such candidates must complete the whole of examination concerned within a period of thirteen months".

Resolved to recommend further that the last para be replaced by the following :—

"In case such a candidate fails to complete the whole of the examination concerned within the stipulated period, he shall revert to the lower class and shall reappear in that examination as a whole in April/October next, as the case may be".

In this connection the orders dated the 3rd March, 1958 passed by the Vice- Chancellor on the recommendation of the Principal, Veterinary Science College, Bikaner, in allowing one more chance to Shri Tej Singh Mehta, who failed to pass the Second B. V. Sc & A. H. examination in Materia Medica in October, 1957 to appear in the same subject in April 1958, in anticipation of amendment of the Ordinance, were reported.

12. The Faculty considered the question of clarifying O. 275G—whether absence of a candidate from the Second and Final M. B., B. S. Examinations owing to shortage in attendance, illness or the like was to be counted as an attempt for the purpose of this Ordinance.

Resolved to recommend that the existing Ordinance be continued and the non-appearance of a candidate at an examination for whatever reason be considered as an attempt for the purpose of this Ordinance.

13. The Faculty considered letter No. F. 18/C—7-57/4482, dated the 14th October 1957, from the Secretary, Medical Council of India, 65, Regla Buildings, New Delhi, conveying the decision of

the Medical Council of India made at its meeting held on 27th September 1957 that the post examination training as envisaged in the Council's recommendations on Professional Education for regular M. B., B. S. students be not enforced in respect of condensed course students going for M. B., B. S. Degree, provided they have satisfactory record of professional work.

In this connection it also considered the opinion of Dr. R. M. Kasliwal, Principal, S. M. S. Medical College, Jaipur who was referred to in the matter and who recommended that the following proviso be added to clause (d) of Ordinance 268 :—

"Provided that this training is not necessary in case of a candidate selected for the condensed M. B., B. S. course".

Resolved to recommend that the above addition in O. 268(d) be approved, as recommended by Dr. R. M. Kasliwal.

14. With reference to Syndicate Res. No. 10 (ii) dated the 27th February 1958, under which it had referred back Resolution No. 3 passed by it on 31st January 1958, regarding the rules relating to the Examination for the degree of Ph.D. in Medicine, the Faculty considered the same in the light of the Syndicate Resolution given below :—

"From a perusal of Rule 1 of the rules relating to the Examination for the Degree of Ph.D. in Medicine given in the appendix to the Minutes of the Board of Studies in Medicine dated the 25th October, 1957, it appears that a Doctor who is on the teaching staff of an affiliated college or a college recognised by the University for the purpose can seek admission to Ph.D. Medicine courses. If so, many a doctor who is engaged in service and who is not member of the Teaching Staff of an affiliated college but is otherwise fully qualified for admission will be deprived of the facility to joint Ph.D. course in Medicine which would not be correct. The Syndicate, therefore, desired that this question with the above observation be referred back to the Faculty of Medicine for consideration and report".

Resolved that the matter be referred to the Committee of Post-graduate Medical Education and Research for clarification.

15. The Faculty considered a letter No. 193/VIII-H-202, dated the 6th January, 1958 from the Principal Medical & Health Officer, Ajmer, requesting that the Victoria Hospital, Ajmer be recognised for the purpose of training of Fresh medical graduates as interneers.

In this connection it also considered the report of the Inspector (Dr. R. M. Kasliwal) appointed by the University to conduct the inspection of the Hospital for the aforesaid purpose (*Vide Appendix D*).

Resolved to recommend that as recommended by the Inspector (Dr. R. M. Kasliwal), the Victoria Hospital, Ajmer, be recognised for the purpose of training of fresh medical graduates as interneers.

16. With reference to Syndicate Res. No. 30, dated the 12th August, 1958, the Faculty considered the question of reviewing and harmonising the rules governing admission of students to the B. V. Sc. and A. H. Examinations in the light of those for the M. B., B. S. Examinations as the nature of the two courses was more or less similar.

Resolved that it is difficult to harmonise the rules for the admission to B. V. Sc. and A. H. Examinations on the lines of the M. B., B. S. Examinations, as the courses and the training for the two examinations is different. However, the Faculty *recommended* that a sub-committee consisting of the following persons be appointed to go into this question. This Committee should meet at Bikaner and submit its report to the Registrar by the end of December 1958 at the latest who will circulate it to the Members of the Faculty for their opinion. Thereafter the matter be placed before the Academic Council for decision. In the meantime, the measures that have been adopted till now with regard to these examination be continued under special permission of the Vice-Chancellor :-

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| 1. Dr. Mohan Singh (Convener) | } Raj. College of Vet.
Sc. & A. H., Bikaner. |
| 2. Dr. P. K. Soni. | |
| 3. Dr. K. K. Vyas. | |
| 4. Dr. B. S. Kahli, S.M.S. Medical College, Jaipur. | |

17. With reference to Academic Council Res. No 42, dated the 25th February 1958 under which it had approved of the recommendation of the Faculty of Medicine, Pharmaceutics and Veterinary Science for admission to the 3rd year class of the Veterinary course of such candidates have successfully completed the two year emergency course training, the *Faculty resolved to recommend* a new Ordinance 299 (v) so as to incorporate the recommendations of the Academic Council.

'O 299 (v)—Not with standing any thing contained in these ordinances a candidate who has successfully completed the 2-year emergency course training at the Rajasthan College of Veterinary Science and Animal Husbandry, Bikaner and has either passed (a) the Intermediate Examination of the University with the medical group of subjects—Physics, Chemistry and Biology with a practical test in each subject, or, (b) an examination recognised equivalent thereto (irrespective of the fact whether he passes the Intermediate Examination before or after the successful completion of the emergency course training); and produces a certificate to the effect that he has served the Government in the field of Veterinary Science for at least three years, may be admitted to the B. V. Sc. & A. H. degree of the University; provided that —

- (i) he has attended an affiliated college for not less than one year during which period he has gone through a course of study, the theoretical, practical and clinical prescribed for the 3rd B. V. Sc. & A. H. Examination;
- (ii) he has passed the 3rd B. V. Sc. & A. H. examination in all the subjects prescribed for the examination; and thereafter.
- (iii) he has passed the Final B. V. Sc. & A. H. after under-going one year training in an affiliated college in all the subjects prescribed for the examination.

A candidate who desires to appear at the 3rd B. V. Sc. & A. H. and thereafter at the Final B. V. Sc. & A. H. under this ordinance must submit his application on a prescribed form by the 15th January for an examination in March-April following; and by the 15th September, for an examination in October following and must send the following with his application :—

- (a) a certificate from the Principal of a Veterinary College affiliated to the University ;which he has attended to the effect that he fulfils the conditions required under O.299 (v ;
- (b) a certificate of character from the Principal of the college concerned;
- (c) an application for enrolment together with the prescribed fee of Rs. 2/- if the candidate is already not enrolled;
- (d) a certificate of having put in at least 3 years' service to the Government in the field of Vet. Science.
- (e) a marks fee of Re. 1/- together with the fee prescribed for the examination."

18. The Faculty considered the question of admission of candidates passing the Higher Secondary Examination of the Board of Secondary Education, Rajasthan or an examination recognised as equivalent there to the Pharmacy courses. At present the candidates passing the High School Examination are eligible for admission to the First year of I Pharm. course, while those passing the Intermediate examination can be admitted either to the I. Pharm. Part II course or B. Pharm Part I course.

In this connection it also considered the views of the Convener, Committee of Courses in Pharmacy (as contained in his letter No. 2/-Pharm/58/599, dated the 13th November 1958) to whom a reference was made in the matter. The Convener was of the opinion that candidates passing the Higher Secondary Examination be admitted only to the 1st year of the I. Pharm course of the University. Further in case such candidates successfully complete the 1st year of the Three-Year Degree course, they be admitted to the 2nd year of the I. Pharm course or to the 1st

year of the B. Pharm. course as done in the case of candidates passing the Intermediate Science Examination.

Resolved to recommend that the opinion of the Convener in the matter be approved.

R. M. Kasliwal
Chairman.

APPENDIX A

(Ref. Fac. of Medicine, Pharm. & Vet. Sc. Res.
Nos. 4, 5, 6, 7 & 8 of Nov. 20, 1958)

Minutes of a meeting of the Board of Studies in Medicine held on Tuesday the 5th August, 1958, at 1.00 p. m. at the University Office, Jaipur.

Present :

1. Dr. B. S. Kahali
2. Dr. G. L. Talwar
3. Dr. B. C. Sharma
4. Dr. R. K. Goyal
5. Dr. R. P. Chaturvedi
6. Dr. R. M. Kasliwal

(Convener).

1. With reference to the Faculty of Medicine Res. No. 4, dated the 30th January, 1958, the Board *resolved to recommend* the functions and duties of the Committee of Post-graduate Medical Education and Research as follows as suggested by the Principal, S. M. S. Medical College, Jaipur vide his letter No. 18922, dated 15th February, 1958.

1. This Committee should deal with all matters concerning Post-graduate studies in Medicine in the University; framing of rules and regulations; additions and alterations if any, in the existing ones; etc.
 2. This Committee may also suggest to the Board of Studies and Medical Faculty with regard to the exemption for a part of the period of study of a candidate after seeing his previous record of work.
 3. This Committee will take stock of the medical research work conducted in the university periodically and suggest any measure to modify, co-ordinate and improve the same.
 4. This Committee will also approve the subject of the theses that are chosen by the guides for the candidates working for their post-graduate studies in various subjects. After scrutinising the subjects of the thesis the matter may be referred to the Dean and later on the matter may be formally reported to the Board of Studies for its information.
2. The Board considered the recommendations of the Committee held on the 29th January 1958, appointed by it vide Res. No. 10, dated the

25th October, 1957 to go through the recommendations (*Vide Appendix I*) of the Conference on Under-Graduate Medical Education convened by the Ministry of Health, Government of India in November 1955 (printed on page 328 of Volume XX of the minutes).

Resolved that the recommendations of the Committee be adopted, (Drs. B. C. Sharma and Chaturvedi dissenting on Res. No. 1 (1) (b) (i)) with the following addition in Res. No. 3 para 2, as suggested by Dr. R. P. Chaturvedi:—

“Subject to adequate staff”.

The Board, however, felt that the implementation of these recommendations may not be easy and before adopting these recommendations in the final shape it may be necessary to take the view of the administrative authorities of the Medical College.

3. Under Section 34 (4) (iv) of the University Act the Board elected Dr. R. P. Chaturvedi to serve as a member on the Committee for selection of examiners in Medicine.

4. The Board reviewed the panel of external examiners for 1958-59

5. The Board perused the reports of examiners and the question papers set for the examinations of 1958 and offered no comments.

6. *Resolved to recommend that* the courses of study in Medicine for the First M. B., B. S. Examination of 1961, Second M. B., B. S. Examination of 1963 and Final M. B., B. S. Examination of 1961 be repeated.

The Board considered the recommendation of the Committee of Courses in Post-graduate Medical Education and Research held on the 4th August, 1958 regarding the M. D., M. S. and M. Sc. (Med.) examinations and approved the same (*Vide Appendix II*).

7. Letters Nos. G/87/6399 and G/9'65 dated the 18th February 1958 and 17th April 1958 respectively of the Principal Medical Officer, Jodhpur along with the views of the Principal, Medical College, Jaipur, as contained in his letter No. 21026/MC/53, dated the 20th March 1958 were put up before the Board and the Board *resolved that* at present it is not possible to recognise any non-teaching Hospital for further period of training for M. S. and M. D. except for one year training—i. e. for training of House Surgeons and Internees and even for the training of these medical officers the non-teaching Hospital should have adequate Library, Laboratory and Museum facilities.

8. Dr. B. S. Kahali moved a proposal that for candidates failing in April examinations in the 1st M. B., B. S. Examination, a Supplementary examination be held in July so that those candidates, who pass in the supplementary examination may continue their studies with the regular students of the next higher class who have passed in April. If this is accepted, the October examination of 1st M. B., B. S. will be abolished and candidates failing in the July (supplementary) examination will have to study for the whole year and appear in the next April examination.

Resolved to recommend that the above proposal be accepted.

R. M. Kasliwal

Convener.

Appendix I

(Ref. B. O. S. in Med. Res. No. 2 of August 5, 1958)

Minutes of the Meeting of the Sub-Committee appointed in pursuance of the Resolution No. 10 of the meeting of the Board of Studies in Medicine held on the 25th October, 1957 to consider the recommendations of the Conference held in November 1955) on undergraduate Medical Education convened by the Ministry of Health (vide letter No. F. 24 (68)/56 M. I. dated 6th December 1957) and the views of the Dean of the Medical Faculty of this University on this matter.

A meeting of the Sub-Committee was held on the 29th January, 1958 in the University Office, Gandhi Nagar, Jaipur. The following members were present :

1. Dr. R. M. Kasliwal
2. Dr. R. K. Goyal
3. Dr. G. L. Talwar
4. Dr. B. S. Kahali

(Convener).

(1) Selection of Students :

At present the selection of students for admission to the College is made on the principles laid down by the Government of Rajasthan—on the basis of marks obtained in the Intermediate in Science and B. Sc. Examinations : the selected candidates are later on interviewed by a Committee who assess mainly his domicile and the physical fitness of the selected candidate for Medical Education.

The Committee recommend that the following procedure for selection of candidates may be suggested to the Government for approval and adoption :—

1) The candidates will be selected on merit evaluated—

- (a) on the results of the Intermediate in Science (or preprofessional examination when it is established) and B. Sc. examination : minimum requirements—second class (48% of Marks) in the above examinations—as at present;
- (b) and also on the results of interview by a selection Committee appointed for the purpose to assess the suitability of the candidate for medical studies by taking into account

- (i) the nature of the extra curricular activities such as athletics, sports, social work, scouting, training in N. C. C. etc.
- (ii) Five percent of the available seats may be reserved for candidates of the backward communities (Scheduled castes and tribes) etc. but they must satisfy the minimum standard of securing second class (48%) in the qualifying examinations.
- (iii) Twenty percent of the seats may be reserved for women candidates. They must satisfy the minimum requirements prescribed.
- (iv) The Selection Committee will have the right to reject a candidate if in their opinion the candidate is unsuitable for medical studies.
- (v) The Committee was of the opinion that at the present time it would not be profitable to include the results of the matriculation or S. L. C examinations or of the class records for assessing the academic merit of the candidate as suggested in the recommendation of the conference.

Dr. G. L. Talwar did not agree with the principle of reservation of seats for women on the following grounds :

- 1) The constitution of the country guarantees equal opportunities to both sexes without any special reservation for any sex.
- 2) Many of the women medical personnel marry and cease to practise and their medical training is thus a national waste—more so as the reservation of certain proportion of available seats for women candidates precludes suitable men candidates from being selected.
- 3) Properly approached, women patients of the country do not object to treatment by men medical officers.

The majority of the members were in favour of reservation of seats for women.

(2) Premedical Studies and Entrance Requirements :

Pending the introduction of the eleven year secondary education course, the minimum requirement for entry into Medical College shall remain as at present, i. e. the passing of the Intermediate Examination in Science of the Indian Universities with Physics, Chemistry, Biology and English.

When the eleven year secondary education course—with the training programme recommended by the Mudaliar Commission and generally accepted by the Education Department of the States is introduced, the passing of the Preprofessional Examination for Medicine will meet the minimum requirement for entrance into Medical College. The Preprofessional course shall be of one year's duration and shall include the study of Physics, Chemistry, Biology including genetics, Elementary Mathematics, Humanities, Sociology and English.

(3) Subjects of Study and Curriculum Hours :

The present arrangement of subjects of study recommended by the Board of Studies in Medicine and adopted by the Faculty of Medicine and followed by the Medical College in this University is suitable.

The Committee however took cognisance of the recommendations of the Conference but as the University is following the two year preclinical and three year clinical course system at present it was considered not desirable, nor possible to adopt the recommendations of the conference regarding the allotment of curricular hours. The committee however is of the opinion that the eleven hundred hours at present spent in Anatomy should be reduced to 800 hours.

Teaching of Elementary statistics (6 to 10 lectures) and a few lectures on genetics and elementary psychology should be arranged in the second year of the preclinical studies. There will be no University examination in these subjects.

Clinical years :—Hours devoted to Medicine, Surgery and Gynaecology and Obstetrics and the subjects studied during these years should remain as at present. More emphasis, however, should be given to Paediatrics and Psychiatry. Hours devoted to Pharmacology should be reduced to 300 from 400. Pathology and Preventive Medicine courses should remain as at present. Certain elective hours (100 hours per year) should be allowed for elective study during both clinical and pre-clinical years. These studies will 'however' be done under the guidance of a teacher.

(4) Examinations—Assessment of Students Progress :

The Sub-Committee recommends that twenty five percent of the marks for the final University examination both in practical and written portions may be allotted to sessional works (terminal examination, class tests, written, oral and practical) and day to day practical work in the laboratories, wards and outpatient departments in place of 10% as recently recommended by the Board of Studies in Medicine. In view of the fact that More emphasis is rightly being given to the practical work, the percentage of marks to be secured for passing the theory portion of the

examination may be reduced to 40 from 50 as at present. The percentage to be secured for passing in the oral and practical portions of the examination and in the aggregate shall remain 50 as at present. Other recommendations of the Conference for improvement of methods of assessing student's progress—such as day to day assessment of the student during the period of study, should be kept in view for implementation as and when facilities are available.

Dr. G. L. Talwar suggested the introduction of a diary incorporating the records of the students' work of all types and kinds from the first year onwards. After discussion the majority of the members were not in favour of introducing such a diary at the present moment.

(5) Consolidated Recommendations Regarding Preventive and Social Medicine :

This branch of Medicine has been recently organised more or less on the lines suggested in the recommendations : there is a separate department and teaching programme of the department is continuous throughout the three years of clinical period. Practical training in rural health problem in rural health centres has been arranged. Introduction of teaching in this branch to the preclinical students at this juncture is not practicable. The other recommendations of the conference—full time staff, integration of the teaching of this department with the teaching of other departments—preclinical and clinical were considered and it was decided that these recommendations should be kept in view for implementation wherever possible and when facilities are available. It is however recommended that additional wholetime staff be made available in this department as early as possible.

Statistics :—A course of elementary principles of statistics has been recommended for study in the preclinical years but there will be no examination in the subject.

(6) The Establishment of Full Time Units in Each Department of Medical College :

All the departments except the department of Preventive & Social Medicine in the Medical College have full time staff: each department is a full time unit. The question of prohibition of every form of private practice may be taken up with the Government. It is recommended that an additional allowance of 25% of pay may be given to those who are entitled to private practice at present to compensate for the loss of private practice and it is recommended that at least one unit be made full time unit—practising in each Department.

(7) The Teacher-Student Ratio :

In an over all estimate of the teacher-student ratio in the medical

college under the University the ratio at present comes to about one teacher per six students which compares very favourably with many other medical colleges in the country. The sub-committee feels that the ratio 1 teacher per 5 students recommended by the conference is an ideal one to aim at but its implementation will necessitate a much larger increase in the teaching staff of the college. The Government may be approached to take necessary action to increase the staff appropriately.

(8) Selection of Teachers And Conditions of Services :

The recommendations of conference were accepted in toto and the Government may be approached to implement it.

(9) Paediatrics :

A separate paediatrics unit under a full time Reader has been established in the college and the students are now required to devote three months to the student of the subject as recommended by the Conference.

(10) Post-Mortem Examination :

The recommendations of the Conference were accepted :

(i) The clinical staff should make every endeavour to educate patients and their relatives in regard to the value and importance of postmortems and to persuade them to give their consent to such examinations when considered necessary.

(ii) Secondly the question of legislation to make post-mortem examination compulsory in cases of deaths occurring in the teaching hospitals when the medical officer in-charge considers it necessary for correct diagnosis, may be taken up with the Government with a view to implement the spirit of this recommendation by a suitable act as early as possible.

One member suggested that the pathology department should be associated with medicolegal post-mortems.

One member suggested that legislation making disposal of the dead without a proper death certificate a cognisable offence might rectify the present inadequacy of postmortem examinations. In this connection it was pointed out that no one objects to compulsory post-mortem examinations.

(11) Psychological Medicine :

The recommendation of the conference is accepted.

The teachers of the various departments (preclinical and clinical) have been advised to emphasize the psychological aspect of the respective subjects of study.

A course of lectures on Elementary Psychology to the second year students has been instituted. More stress is now being given to the teaching of psychiatry in the clinical years on the lines recommended by the Conference.

B. S. Kahali
Convener.

Appendix II

(*Rej. B. O. S. in Medicine Res. No. 6 of August 5, 1958*)

Minutes of the meeting of the Committee of post-Graduate Medical Education and Research held on Monday the 4th August, 1958 at 1 p.m. at the University Office, Jaipur.

Present :

1. Dr. B. C. Sharma
2. Dr. R. K. Goyal
3. Dr. G. L. Talwar
4. Dr. B. S. Kahali
5. Dr. R. M. Kasliwal

(*Convener*).

1. The Committee, while perusing the regulations of the Post-graduate studies in Medicine, noted that the scope of the papers in various subjects is not clearly defined and since there is no collaboration in the various examiners in the same subject, there is likelihood of repetition of the questions. The Committee feels that while there is no justification for collaboration in Post-graduate examinations by the examiners there is a definite need for defining the scope of each paper, so that the examiners confine their questions within the particular scope. If this is done, it would be made possible to avoid the repetition of questions without collaboration. With that view, the committee recommends the changes *vide Appendix*.

2. The Committee discussed that the students prepare their theses and submit them only four months before the examination and lot of their valuable time is spent in preparation of their theses alone, while they should be concentrating on the study of their subject as a whole. The Committee feels that the preparation of the theses and their submission should be done at least 6 months for M. Sc. (Med) and 8 months for M. S. and M. D. before the candidates appear for the University examination.

R. M. Kasliwal
Convener.

Appendix

(Ref. Committee of Post-graduate Medical Education and Research Res. No. I of August 4, 1958)

The Examination for Part II shall be as under :

M. D. (Medicine & Therapeutics Part II)

Branch I :

- 1st Paper : Principle & Practice of Medicine including Therapeutics except those covered in No. II paper.
- 2nd Paper : Psychological Medicine & Neurology Pediatrics, Tuberculosis, Dermatology.
- 3rd Paper : Recent advances in Medicine
An Essay :

M. Sc. (Medical) Anatomy

- Paper I : Human Anatomy including Neuro-Anatomy.
- Paper II : Applied Anatomy & Recent Advances and History of Anatomy.
- Paper III : Embryology, Comparative Anatomy & Evolution.

M. Sc (Pharmacology)

The papers should be as follows :

- 1st Paper : General Pharmacology, mechanism and drug actions.
- 2nd Paper : Experimental Pharmacology, Bioassay and History of Pharmacology.
- 3rd Paper : Applied Pharmacology.

This different papers in M. Sc. Physiology will comprise of the subjects as mentioned against the papers in the following scheme :

- 1st Paper : Biophysics and Biochemistry and Physiology (including Histology) of Muscles, Nerves, Circulation and Respiration.
- 2nd Paper : Physiology (including Histology) except the subjects included in the First paper.
- 3rd Paper : Comparative animal Physiology including History of Physiology.

Scope of the Papers for the examination for the M. S. Degree in General Surgery.

Paper I : Principles and Practice of General Surgery including Abdominal and Genito-urinary Surgery and excluding only the Specialities mentioned in Paper II.

Paper II : The Specialities of Orthopaedic Surgery, Neuro-surgery, Thoracic Surgery, Plastic Surgery.

Paper III : An Essay on any Surgical subject including Recent Advances in Surgery.

Pathology (M. Sc. or M. D.)

No change.

APPENDIX B

(*Reg. Fac. of Medicine Pharm. & Vet. Sc. Res.*
No. 9 of November 20, 1958)

Minutes of a meeting of the Committee of Courses in Veterinary Science and Animal Husbandry held on Wednesday the 6th August 1958 at 1.00 p. m at the University Office, Jaipur.

Present :

1. Dr. M. S. Purohit
(In the chair)
2. Dr. B. K. Soni
3. Professor K. K. Vyas
4. Dr. R. N. Mohan

Shri B. N. Handa, Director of Animal Husbandry and Principal, Rajasthan Veterinary College, Bikaner was also present as an observer to acquaint himself with the working of this Committee.

In the absence of the Convener Dr. M. S. Purohit was unanimously requested to act as Chairman for this meeting.

1. The Committee *resolved to recommend* that the question of appointing a Convener for this Committee should be decided only after the vacancy in the Committee created by the retirement of Lt. Col. A. C. Aggarwalla is filled up. In this connection the Committee *recommended* that the Faculty of Medicine, Pharmaceutics and Veterinary Science may consider electing Shri B. N. Handa to this Committee.

2. The Committee *resolved to recommend* the courses of study for the Second, Third and the Final B. V. Sc. & A. H. Examinations of 1960 should be the same as these of 1959 and that the Courses of study for the First B. V. Sc. & A. H. Examination of 1960 should be as recommended in the Model Syllabus for the Veterinary Degree Course as prepared by a Special Conference of the Principals of all the Veterinary colleges in India in August 1957, appointed by the Indian Council of Agricultural Education, held at Lucknow in August 1956 (*vide appendix*).

3. The Committee reviewed the panel of examiners.

4. The Committee noted the comments made by the examiners in their reports for the examinations of 1958 and resolved that these be

communicated to the Principal for further necessary action.

5. The Committee *resolved to recommend that* the model syllabus for the Veterinary Degree Course as prepared by a Special Conference of the Principals of all the Veterinary colleges in India in August 1957, appointed by the Indian Council of Agricultural Education, held at Lucknow in August 1956, should be accepted and adopted, beginning from the First B. V. Sc. & A. H. examination of 1960. The Committee however observed that the minor changes and adjustment in this model syllabus of different examinations be made as and when necessary. In this connection the committee further observed that the adoption of this model syllabus will necessitate certain amendment in the Ordinances etc. in relation to the different B. V. Sc. & A. H. examinations.

M. S. Purohit
Chairman.

Appendix

(Ref. Committee of Courses in Vet. Sc. & A. H. Res.
Nos. 2 & 3 of August 6, 1958)

Model Curriculum for the Veterinary Degree Course.

First Year :

Lectures	—	400	clock hours.
Practical	—	540	„ „
		<hr style="width: 50px; margin: 0 auto;"/> 940	

Examination Marks.

	Lect. (1)	Pract. (2)	Theory (3)	Practical (4)
1. *Animal Management and Hygiene.	60	200	100	100
2. **Anatomy, Part I (including Histology and Embryology).	100	120	100	100
3. Biochemistry and Physiology Part I.	120	120	100	100
4. Agriculture, Economics and statistics	120	100	100	100
	<hr style="width: 50px; margin: 0 auto;"/> 400	<hr style="width: 50px; margin: 0 auto;"/> 540		

*Should also include Riding if facilities exist.

**Dissections may be done, but no examination will be held.

Second Year :

Lectures	—	450	clock hours.
Practical	—	480	„ „
		<hr style="width: 50px; margin: 0 auto;"/> 910	

	(1)	(2)	(3)	(4)
1. Anatomy, Part II.	100	120	100	100
2. Physiology, Part II.	90	120	100	100
3. Pharmacology & Materia Medica.	120	120	100	100

4. Pathology, Part I.	60	60	} No examination
5. Bacteriology, Part I.	60	60	
	<u>430</u>	<u>430</u>	

Third Year :

Lectures	—	435 clock hours.
Practical	—	420 " "
		<u>915</u>

	(1)	(2)	(3)	(4)
1. Pathology, Part II.	45	60	100	100
2. Bacteriology, Part II.	75	90	100	100
3. Parasitology.	90	90	100	100
4. Animal Nutrition.	75	90	100	100
5. Dairy Science & Food Hygiene.	90	90	100	100
6. Medicine—Clinical.	60	—	} No examination.	
7. Surgery—Minor.	60	—		
	<u>495</u>	<u>420</u>		

Fourth Year :

Lectures	—	445 clock hours.
Practical	—	520 " "
		<u>965</u>

	(1)	(2)
1. Medicine (including Toxicology and Jurisprudence).	150	150
2. Surgery.	135	150
3. Animal Genetics and Breeding.	100	100
4. Gynaecology & Obstetrics.	60	120
5. Ambulatory Clinic	Last two months or during vacations.	
	<u>445</u>	<u>520</u>

Notes :

1. Extra-mural training in livestock farms.

2. Extension training in area under the college.
3. Admission qualification-Pre-university.
4. Credit for daily class work.
5. Series of lectures to be delivered in Extension Work, but no examination.

Animal Management and Hygiene

Lectures—60 clock hours.

Practical—200 „ „

1. Animal Management :

General discourse of origin, domestication and utility of farm animals; their role in Indian economics.

Definition of common terms : Cattle—bull, bullock, cow, heifer, calf, steer, Zebu, cross-bred, etc. Equines—stallion, mare, gelding, colt, foal, filly, year ling, donkey, ass, mule, jennet, hinny, pony, hack, hackney, hunter etc. Terms of similar nature applied to camels, elephants, buffaloes, sheep, goats, dogs, cats, pigs and poultry.

‘Points’ of different kinds of animals; their conformation, colours and body markings.

Ageing of different species of animals.

Important breeds of Indian livestock, including poultry; their characteristic features and natural habitats in India. Breeds of foreign livestock, including poultry, important for India; their distinguishing characters and comparison with the Indian breeds.

General care and management of livestock—dairy and work cattle, race and work horses, sheep, goats, pigs, camels, poultry, ducks etc. Approaching and handling of animals. Methods of restraint, securing, casting; appliances used. Measurement and weighing of animals. Transport of animals by road, rail, sea, motor and air. Preparing animals for exercise, shows, exhibitions etc.

Animals in health and disease. Body temperature, pulse, respiration, posture etc. First-aid treatment; protection from biting flies, mosquitoes, ticks, etc. Methods of administering medicines. Bandages and bandaging. Common vices in animals and its prevention.

Washing, grooming, clothing, bedding; branding, tattooing, dehorning, clipping, shearing, wallowing.

Feeding and watering of livestock—watering vessels and trough-mangers; grazing.

Saddlery and harness of horses, camels and bullocks; their different parts and fittings. Yokes. Prevention of yoke galls and saddle galls. Exercising of animals. Training of bullocks and tonga ponies.

Principles of shoeing and shoes.

Signs of heat (oestrus); preparation for mating; gestation period, care during pregnancy and at calving, foaling, kidding, lambing, whelping, etc. Care of breeding sires. Weaning and rearing of young stock. Drying off, etc.

Management of poultry. Collection of eggs, incubation and hatching. Brooding, sexing and rearing of chicks. Grading, testing and defertilization of eggs.

Management of sheep flocks. Classification of wool; defects of wool; factors affecting the quality of wool.

Management of goats; mohair.

Pigs and piggeries, and their management.

Fish; their points common Indian fresh-water and marine fish; stocking and rearing operations.

2. Hygiene

Veterinary Hygiene:

Definition; health and disease signs of health and sickness.

Disease : Classification; mode of spread of diseases; methods for the control of diseases.

- (a) Notification, isolation, quarantine, destruction and disposal; interference; immunisation.
- (b) Disinfections Physical and the chemical disinfectants; disinfection of animal habitations.
- (c) Dips and dipping of livestock, foot baths, spraying.
- (d) Regulatory activities by the State in animal disease control.
- (e) Regulation of animals transport, movement, livestock markets and shows.

Water and Water Supply :

Rainfall and geology in relation to water supply; sources of water supply. Impurities and pollution of natural waters; prevention of pollution and contamination of water sources. Hardness of water significance of hard and soft waters, treatment of hard waters. Purification of water supplies; storage, coagulation and sedimentation, filtration;

physical and chemical sterilisation. Distribution and storage of water supplies; action of water on metals

Examination of water and water supplies; collection of samples for examination, topographical examination of the source and circumstances of the supply, bacteriological examination, physical and chemical examination, microscopic examination; interpretation of results of the examination, classification of waters, standards for potable waters.

Water supply for domesticated animals, animal diseases associated with water supplies, hygienic requirements, amount of water required by domestic animals, hygienic methods of watering livestock, urban and rural water supply.

Sanitation :

Drainage of buildings, drain pipes, traps, fittings, laying of a drainage system, testing of drains.

General principles of sewage disposal and purification. Removal and disposal of excreta and other wastes from animal habitations. Collection, storage and disposal of solid manure. Compost making. Conveyance, storage and disposal of liquid manure. Animal excreta as a factor in the spread of disease. Manure as breeding material for flies, fly-borne diseases, methods of manure disposal to prevent fly breeding.

Environment :

Effect of climate on the health and productivity of livestock and measures to counteract this.

Ventilation :

Composition of atmospheric air, pollution of atmospheric air, changes in the air resulting from respiration, significance of the changes in the expired air, detrimental effects of inadequate ventilation, air-borne diseases.

Ventilation requirements, presumptive standards for permissible air pollution in buildings, respiratory exchange of domestic animals, carbon dioxide excreted by domestic animals, fresh air supply, air-exchange and cubic space; floor space. Mechanics of air flow and ventilation, natural and mechanical ventilation, size of air inlets and outlets, inlet and outlet ventilators, Findlay's and King's methods of ventilation, ventilation of double-storey storey stables.

General investigation of the condition of the atmosphere in animal buildings, air temperature, humidity, velocity, estimation of carbon dioxide, heating, and cooling power of the air.

Light :

Daylight changes; effects of light on breeding habits, body covering; growth and production of farm animals; experimental light treatment; mechanism of light action; practical considerations.

Housing of Animals :

General principles of affecting the design and construction of buildings for housing livestock. Selection of site. Arrangements of the buildings with special reference to Indian conditions.

General principles of construction of buildings; building materials, bricks, tiles, stones, limes, mortars and cements, mud; asphalts, felts and bituminous roof coverings. Timbers; characteristics of good timber, common defects in timber.

Wall, roof and floor construction.

Dampness in buildings and its prevention.

More detailed considerations of construction of animal houses. Housing of horses, dairy cattle, calves, breeding bulls, work cattle, fattening cattle, pigs, goats, sheep, poultry, chickens, ducks, turkeys and dogs.

Practical

Water Analysis : (1) Qualitative examination for the presence of chlorides, sulphates, phosphates, nitrates, sulphides, cyanides and fluorides; arsenic, lead, iron, zinc, copper. (2) Estimation of total solids, hardness, chlorides, nitrates, fluorides, ammonia.

Environmental analysis : (1) Indoor : Estimation of carbon dioxide, temperature and humidity and of air velocity and cooling power with Kata thermometer.

(2) Outdoor : Estimation of air temperature and humidity, direct solar radiation, reflected solar radiation, reflected solar radiation, and wind velocity.

Animal reaction : (1) Determination of heat tolerance coefficient of cattle. (2) Determination of rectal and skin temperature of cattle in different environments. (3) Estimation of the physical attributes of wool.

Excursions

Visits to the following :

(1) Different water sources.

- (2) Water purification works.
- (3) Modern animal houses.
- (4) Sewage treatment works.
- (5) Sewage farms.
- (6) Observatory.
- (7) Livestock farms.

Text-Books

1. 'Practical Animal Husbandry' by Miller and Robertson.
2. 'Animal Management', prepared in the Veterinary Department of the War Office.
3. 'Veterinary Hygiene' by R. G. Linton.

Reference Books

1. Hand-book in the Handling of Animals and First Aid', Bailliere, Tindall & Co.
2. Hunting's Art of Horse Shoeing' by A. R. Mattison.
3. Principles of Animal Hygiene and Preventive Medicine' by Van Es.
4. 'American Wool Handbook' by Von Deren.
5. 'Tweed's Poultry Keeping in India'.
6. 'Pigs' by Reid.
7. ICAR Miscellaneous Bulletin No. 17, 24, 27, 46 and 75 (on breeds of Indian livestock).
8. 'Fish culture in India' by K. H. Alikuhni, ICAR Farm Bulletin No. 20, 1957.

Anatomy Part I

(Including Histology and Embryology)

Lectures : 100 clock hours.

Practical : 120 clock hours.

1. Osteology and Arthrology

(Study of the topographical anatomy of the OX and comparative anatomy of horse, camel, dog and pig and general study of the avian skeleton).

Introduction

Branches of anatomy; classification and characters of the animals under study.

Osteology

Characters, coverings, contents, composition, and structure of the bone; classification of bones; ossification; descriptive features of the bone (including; articular surfaces).

Axial Skeleton

Vertebral column; typical vertebra; cervical vertebrae; atlas, axis, and the sixth and seventh cervical vertebrae; thoracic vertebrae; lumbar vertebrae; sacrum; coccygeal vertebrae; vertebral column as a whole; ossification of the vertebral column.

The thorax-ribs, costal cartilages; sternum.

Skull : Bones of the cranium facial bones, mandible, hyoid bone, sinuses, cranial cavity, nasal cavity, orbital fossa, temporal fossa craniology.

Appendicular skeleton : Scapula, humerus, radius-ulna, carpus, metacarpus, phalanges, sesamoids; manus in general. Pelvis and pelvimetry; sex differences in pelvis; femur, patella, tibia, fibula, tarsus, metatarsus, phalanges, sesamoids.

Arthrology ;

Joints and their general consideration.

1. *Diarthroses* : Arthrodia, enarthrosis, ginglymus trochoid. Joint: joint capsule, joint cartilage, ligaments; synovia; movements- flexion, extension, adduction, abduction, circumduction, and rotation.

2. *Synarthroses* : Sutura (S. serrata, S. squamosa, S. harmonia); syndesmosis, synchondrosis, symphysis gomphosis.

3. *Amphiarthroses*.

4 *Articulations*.

(i) Articulations of the vertebral column.

(ii) Articulations of the thorax-costo-vertebral, costo-chondral, chondro-sternal, inter-chondral and sternal.

(iii) Articulations of the skull.

(iv) Articulations of the thoracic limb.

(v) Articulations of the pelvic limb.

Practical

Identification and description of bones; articulation of bones and joints; surface markings of bone in the body; identification of mixed bones.

Dissection of the ligaments of the joint; marking areas of the attachment on the bones; sketching of bones and ligaments.

2. Histology and Embryology

Histology :

Microscope and its use. Examination of common objects likely to cause confusion in microscopic work.

Structures of the animal cell; mitotic division.

Elementary tissues; preparation and examination of varieties of epithelial, connective, muscular, and nervous tissues.

Histological technique; freezing and paraffin methods for making microscopic sections of organs. Staining methods. Staining and examination of blood of ox, horse, camel, dog, pig and fowl.

Stained sections of organs for study; arteries, veins, tongue salivary glands, oesophagus, stomach of dog, rumen and reticulum of ox, duodenum, jejunum, ileum and large intestine; liver of dog and pig; gall bladder, pancreas, trachea and lungs; skin-hairy and non-hairy portions; kidney, ureter and urinary bladder; testicle, epididymis, vas deferens, seminal vesicle, prostate, Cowper's gland, penis; ovary, oviduct, uterus and mammary gland; tonsil, lymph node, haemo-lymph node, spleen, and thymus; thyroid, parathyroid, adrenal and pituitary; spinal cord, cerebellum and cerebrum, sense organs; eye, and olfactory mucous membrane.

Embryology :

Structure and maturation of male and female germ cells; examination of live and stained bull sperm; fertilization; zygote, blastula, gastrula, germ layers; formation of placenta, foetal circulation, forms of placenta in animals.

Organogeny—of mammals in general, entodermal, mesodermal and ectodermal derivatives.

Examination of developing chick embryos of 48 hours' and 72 hours' incubation, and of a mammalian embryo to study organogeny at suitable stages.

Text Books

1. 'Anatomy of the Domestic Animals' by Sisson & Grossman.
2. 'Developmental Anatomy' by Arey.
3. 'Essentials of Histology' by Schaeffer.

4. Bailey's Text Book of Histology.

Reference Books

1. 'Text Book of Histology' by Maximow and Bloom.
2. 'Structure of the Fowl' by Bradley.
3. 'Handbook of Microscopic Characteristics of Tissues and Organs' by Stike.
4. 'Introduction to Vertebrate Embryology' by Shumway.
5. 'Vertebrate Embryology' by McEween.
6. 'McFadyean's Osteology and Arthrology of the Domesticated Animals' by Hughes and Dransfield.
7. 'Fundamentals of the Histology of Domestic Animals' by Troutman and Fiebiger.
8. 'Early Embryology of Chick' by Patten. 9. 'Dissection Guide of the Cow' by Hebal.

Agriculture, Economics & Statistics

Lectures	—	120 clock hours.
Practical	—	100 clock hours.

1. Agriculture and Fodder Crops

Soils : Soils and soil formation; major groups of soils in India with special reference to the State concerned. Soil and its functions; surface soil and sub-soil.

Physical properties of soil; texture, structure; mechanical composition of soil—sand, silt, clay; their properties and functions.

Soil fertility : Inorganic constituents of soil; nitrogen, phosphorus, potash, calcium, minor elements and their functions. Nitrogen cycle.

Soil organic matter and humus and their functions. carbon cycle. Soil reaction and pH Value.

Nutrients essential for plant growth; manures and fertilisers; kinds, composition, preparation, manuring and fertilisation of crops, methods and time of their application.

Agricultural meteorology : Meteorological instruments, methods of observation and recording; rainfall, influence of seasons on agricultural practices in general.

Water : Soil water, hygroscopic, capillary and gravitational water; available and non-available soil-moisture, water-holding capacity.

Irrigation and drainage; their importance in crop production sources and methods of irrigation.

Implements and tillage : Ploughs, harrows, hoes, seed-drills and hand-tools; their working, action and care,

Tillage, its importance and effects; ploughing, harrowing, sowing inter-culturing and harvesting.

Rotations : Crop rotations, fallows and crop mixtures, principles underlying these practices.

Fodder production : Economic importance of fodder production in animal husbandry; factors of fodder production.

Soil and climatic requirements and methods of cultivation—preparation of land, sowing, manuring, irrigation and harvesting—of important fodder crops and cultivated perennial grasses, e. g. jowar, maize, millet, cow-pea, guar, oats, berseem, lucerne, Napier grass, Guinea grass, Rhodes grass, Para grass, blue panicum etc.

Management and improvement of grass lands and pastures under irrigated and unirrigated conditions, Reclamation of land, preparation of seed bed, method of sowing, manuring, and after care. Controlled grazing, disc harrowing, and re-seeding of grasslands.

Harvesting and storage of fodder—green and dry.

Weeds and their control.

System of farming : Grassland husbandry, ley farming; mixed farming; their scope and place in milk production and improvement of cattle.

Practical :

Preparation of land for fodder crops; for pasture land, and for ley farming.

Working knowledge of common field operations for production and handling of fodder crops, grasses and legumes. Use of tools and implements.

Identification of local grasses, fodder crops, fodder trees, seeds and weeds.

2. Economics and Marketing :

- (i) *Introductory* : Definition and scope of agricultural economics with special reference to livestock and livestock products.
- (ii) Consumption, production, capital; theory of value.
- (iii) Money; banks and banking credits; international trade.
- (iv) History and scope of marketing and its organization in India.

- (v) Markets : Types of markets; primary markets, secondary markets; mixed types.

Forward markets; their constitution and working, including future trading.

Types of dealers and marketing channels.

- (vi) Prices and margins : Price determinants—consumers producers', retail and whole-sale prices; fluctuations due to maladjustments between supply and demand.
- (vii) Price spread. From producer to consumer.
- (viii) Seasonal variation in prices.
- (ix) Marketing News Service.
- (x) Regulated markets, with special reference to livestock.
- (xi) Cooperative marketing.
- (xii) Marketing surveys; statistics, methodology and objects.
- (xiii) Marketing of livestock and livestock products; Cattle, goats, sheep, poultry, hides, skins, wool, bristles; meat, eggs, fish, milk, ghee, and butter.
- (xiv) Grading, standardisation, inspection, and regulatory activities. Grading under Agricultural Produce (Grading and marketing) Act, 1937, with special reference to livestock commodities.

Practical:

- (i) Visits to Agmark grading stations for wool, bristles, eggs and ghee.
- (ii) Visits to wool-baling press, hides and skins market, and regulated market for livestock.

Reference Books

1. Reports of the Directorate of Marketing and Inspection, Government of India, on the marketing of (i) cattle, (ii) Poultry, (iii) hides, (iv) skins, (v) wool and hair, (vi) bristles, (vii) fish, (viii) milk, (ix) ghee and other milk products, and (x) meat.
2. 'Indian Economics' by Jather and Beri, Part I.
3. 'Indian Rural Problems' by Nanavati and Ajuaria

3. Statistics :

Statistical Methods :

Scope of Statistics as a science of methods of interpreting data. Frequency distributions.

Presentation and summarization of statistical data by graphs and diagrams—histograms, frequency polygons, ogives, etc.

Measures of average and variation.

Elementary ideas on probability—rules of addition and multiplication.

Binomial distribution—proportion and its standard error.

The normal curve—estimation of mean and variance standard error.

S and F tests of significance.

X tests—simple applications.

Linear regression—prediction equation.

Bivariate population—scatter diagram and correlation table, coefficient of correlation.

Design of Experiments :

Principles of experimental design. Replication, randomisation and local control completely randomised design, simple randomised blocks and latin squares. Procedure of randomisation in each case. Analysis of variance and interpretation of data.

Factorial experiments—main effects and interactions.

Sampling Techniques :

Sampling versus complete enumeration, simple random sampling—sampling and non-sampling errors, bias; choice of frame and sampling units, distribution of sample size; stratification and choice of strata.

Place of sample surveys in collecting livestock statistics.

Note : The lectures should be illustrated with examples from the various branches of animal husbandry and veterinary science.

Practical :

Statistical Methods :

- (1) Presentation of data—tables, charts and diagrams. (2) Frequency distributions—calculation of mean and variance. (3) T and F tests. (4) X test. (5) Regression and correlation.

Design and Analysis of Experiments :

- (1) Completely randomised design. (2) Randomised block design. (3) Latin square design. (4) Experiments with two factors. (5) Use of random number tables for allocation of treatments.

Sampling Techniques :

- (1) Drawing a random sample. (2) Estimation of mean values and standard error, (a) from simple random sample, (b) from stratified random samples. (3) Determination of sample size.

Reference Books :

1. 'Statistical Method' by Snedecor.
2. 'Statistical Methods for Agricultural Research Workers' by Panse and Sukhatme.
3. 'Sampling Theory of Surveys with Applications' by Sukhatme.
4. 'Statistical Tables for Medical, Biological and Agricultural Research Workers' by Fisher and Yates.

Biochemistry and Physiology Part I

Lectures—120 clock hours

Practical—120 clock hours.

1. Biochemistry :

The physico-chemical basis of physiological phenomena.

Energy of molecules in solution, diffusion; osmosis, osmotic pressure; neutrality and reaction, 'buffer' systems, hydrogen ion concentration; properties of colloids, membrane permeability, membrane equilibria.

Chemistry of proteins, fats, and carbohydrates.

Composition of food; carbohydrates, fats, proteins, biological value of proteins and specific dynamic action, non-protein nitrogen crude fibre, vitamins.

Role of various food constituents.

Enzymes and biological oxidation and reduction.

Role of micro-organisms in digestion, with particular reference to herbivores.

Heat value of food stuffs; energy balance; respiratory quotient, basal metabolism; metabolic adjustments.

Metabolism of fats, proteins, carbohydrates, minerals and water.

Role of liver in metabolism and detoxication.

Metabolic functions of anterior pituitary, thyroid, parathyroid, adrenal cortex and islets of langerhans.

Practical :

Use of (i) Comparator and PH meter. (ii) Bio-colorimeter and Photo-electric colorimeter. Determination of pH of fluids.

General reactions of carbohydrates, proteins and and fats.

Action of enzymes on foodstuffs.

Blood-characters and composition. Medico-legal tests for blood.

Bile-bile salts and bile pigments.

Urine-character and compsoition.

Detection of substances of physiological interest.

Estimation of sugars—glucose and sucrose.

Estimation of calcium, magnesium, phosphorus, protein and sugar in blood; urea, sugar, and ammonia in urine.

Text Books :

1. 'Text Book of Biochemistry' by A. T. Cameron.

2. 'Practical Physiological Chemistry' by S. W. Cole.

Reference Books :

1. 'Practical Physiological Chemistry' by P. B. Hawak et al.

2. Physiology Part I :

Lectures—120 clock hours.

Practical—120 „ „

(Physiology of the domestic animals, including important features of the avian physiology).

Introductory : Structural basis of the body, vital phenomena of the cells, structure of cell, physical structure of protoplasm, surface layer and differentiation of cells.

Blood: General structure, reaction of blood and its regulation, specific gravity; red blood corpuscles, white blood corpuscles and platelets; their origin, life-history and functions. Haemoglobin, haemolysis, plasma protein, origin and functions; coagulation of blood. Amount of blood and methods of its determination. Alkali reserve.

Lymph: Formation, circulation and functions. Lymphatic glands.

Cerebrospinal fluid: Formation and functions.

Circulation: Heart—structure, valves, heart-pump; rhythmicity and conduction. Electrocardiogram. Apex beat. Cardiac cycle; heart

sounds. Ventricular output, stroke-volume, minute-volume, circulation time. Intrinsic regulation. Coronary circulation.

To cause of heart beat—myogenic and neurogenic theories. Effect of ions. Properties of myocardium.

The nervous and chemical regulation of heart; cardiac reflexes. Heart rate and effect of temperature. Cardiac irregularities.

Flow of blood, blood velocity, blood pressure (arterial and venous), effect of gravity; pulmonary circulation.

Arterial pulse-velocity; its nature in health and disease. Venous pulse.

Vasomotor mechanism. Vasomotor nerves—origin, distribution and mode of action. Vasomotor reflexes. Chemical control of arterials. Control of capillaries. Shock.

Respiration: The respiratory apparatus. Mechanism of respiration, abdominal and costal types of respiration. Volume of air respired. Pneumothorax. Respiratory rate. Respiratory centre. Chemical and nervous regulation. Chemistry of respiration. Principles of ventilation.

Transport of blood gases. Effects of altered pressure.

Respiration in health and disease; respiratory sounds. Production of sounds; special respiratory acts.

Digestion and absorption: Alimentary canal in different animals, prehension, mastication, deglutition.

Digestion—factors of digestion.

Digestion in carnivora, herbivora, and omnivora.

Salivary glands—regulation of secretion, composition and functions of saliva. Digestion in the simple stomach; gastric juice, composition, mechanism of secretion and action. Ruminant stomach, rumination, digestion in ruminant stomach.

Digestion the small intestine. Pancreas—composition, action and control of secretion of pancreatic juice. Intestinal glands composition, action and control of secretion of intestinal juice, Liver and its functions, composition, action and mechanism of secretion of bile. Bacterial processes in the small intestine.

Digestion in the large intestine. Large intestine of carnivores—form, structure, secretion and functions. Large intestine of herbivores—form, structure, secretion and functions.

Movements of stomach and intestines. Stomach movements—regulation, hunger contractions, vomiting; thirst. Movements of small and large intestines—regulation, rate of passage of food; defaecation.

Absorption—channels of absorption, absorptive surfaces, mechanism. Absorption of fat, proteins, and carbohydrates.

Practical :

Appliances and techniques used in experimental physiology.

Blood. Physical properties of blood, relative volume of corpuscles to plasma, enumeration of blood corpuscles, estimation of haemoglobin, colour index, fragility, viscosity, coagulation time. Blood groups. Differential count. Preparation of physiological solutions.

Text Books

1. 'The Physiology of Domestic animals' by H. H. Dukes.
2. 'Experimental Physiology' by D. T. Harris.

Reference Books :

1. 'Starling's principles of Human Physiology' by Evans.
2. 'Experimental Physiology' by E. S. Schafer,
3. 'Applied Physiology' by S. Wright.

Physiology Part II.

Lecture — 90 clock hours.

Practical — 120 „ „

Physiology of the domestic animals, including important features of the avian physiology.)

Excretion : Kidney; mechanism of and factors regulating renal secretion micturition. Urine—composition and character of urine of different animals, important abnormal constituents.

Skin, its glands and functions.

Endocrine organs : General; chemical regulatory mechanism. Chemistry, mode of action, effects of excess or deficiency and clinical conditions associated with over or under-secretion of thyroid, parathyroid, pituitary, adrenal, testes, ovary, and pancreas.

Inter-relationship of endocrine glands.

Reproduction : Female and male generative organs. Oestrus cycle, puberty, pregnancy and parturition.

Ovary—ovogenesis, follicular development, ovulation, corpus luteum.

Mammary gland—development and secretion, milk of different animals, control of lactation.

Testes, accessory sex glands, spermatogenesis, semen.

Hormonal regulation of reproductive phenomena.

Physiology of the foetus.

Locomotor system: Muscle and nerve. Skeletal muscle—characteristics of response to stimulation, changes associated with contraction, rigor mortis. Smooth muscle—tonus, rhythmicity.

Nervous system: Nerve impulse—nature of impulse, factors modifying nerve impulses. Spinal cord—functions, reflex action, spinal reflexes.

Brain stem, cerebellum and cerebrum—their functions. Muscle tonus, decerebrate rigidity, postural reflexes. Conditioned reflexes.

Autonomic nervous system.

Special senses: General mechanism of sensation, physiology of sensation.

Vision—dioptrics of eye; retina, vision, changes in retina during vision; colour vision; periscopic, binocular and stereoscopic vision. Errors of refraction.

Hearing—mechanism of hearing, range of hearing.

Smell—receptors, olfaction in animals.

Taste receptors.

Cutaneous sensation.

Basal metabolism and heat regulation: The exchange of matter and energy—calorimetry, respiratory quotient, basal metabolism, factors influencing metabolic rate.

Heat regulation—production and regulation of heat, fever.

Practical:

1. Electrical variations in the beating heart. Recording of electrocardiogram of animals.

2. Open chest preparation of dog or cat. Inspection of the beating heart *in situ*. Recording of contraction of auricle and ventricle. Recording of blood pressure. Response of heart to stimulation of vagus and drugs (adrenalin and atropin),

3. Isolated mammalian heart—coronary perfusion. Response of isolated heart to temperature and drugs (adrenalin and atropin).

Heart: Physiological anatomy of the mammalian heart: action of valves.

Frog's heart *in situ*—recording of the beat, effect of temperature on sinus and ventricle, Stanius' ligatures. Perfusion of frog's heart—action of ions and drugs (adrenalin and atropin). Innervation of frog's heart—stimulation and escape of vagus.

Blood vessels : Perfusion of frog's blood-vessels—effect of drugs (adrenalin and atropin) and temperature. Blood pressure.

Muscle : Nerve-muscle preparation—electric stimulation, twitch, superposition and summation of contractions, tetanus, fatigue, effect of load and afterload. Biological and biochemical tests for diagnosis of pregnancy.

Note: Text-books and reference books as given under Physiology Part I.

Anatomy Part II

Lecture : 100 clock hours.

Practical : 120 „ „

(Topographical anatomy of the ox and comparative study of horse, camel, pig and dog and the splanchnology and other anatomical peculiarities of the poultry).

Myology : Muscles and accessory structures—fascia; muscles of the subcutaneous region, muscles of the thoracic limb, abdominal muscles, diaphragmatic region, sublumbar muscles, muscles of the back and loins, muscles of the thorax, muscles of the pelvic limb, muscles of the tail, muscles of the neck, muscles of the head.

Splanchnology. Digestive system : The mouth, the tongue, teeth and their development; salivary glands, pharynx, oesophagus abdomen, peritoneum, stomach, small intestines (duodenum, jejunum and ileum); large intestines (caecum, great colon, small colon and rectum), anus; accessory abdominal organs—liver, pancreas, spleen.

Respiratory system : Nasal cavity, pharynx, larynx, trachea; thoracic cavity. pleura, mediastinum; lungs; thyroid, parathyroid, thymus.

Urogenital system : Urinary system; kidneys, ureters, bladder; adrenals.

Male genital system; testicle, vas deferens, seminal vesicles, prostate, bulbo-urethral glands (Cowper's glands) male urethra, penis prepuce, scrotum.

Female genital system; ovary, uterine (Fallopian) tube, uterus, vagina, vulva, female urethra; mammary glands.

Angiology : The heart, its nerve and blood supply. Arteries pulmonary and systemic arteries.

Thoracic aorta; coronary arteries, common brachiocephalic trunk, arteries of the thoracic limb, brachial arteries, broncho-oesophageal artery, inter-costal arteries, phrenic arteries common carotid, oecipital artery, external carotid artery.

Abdominal aorta; coeliac artery, anterior mesenteric artery, renal arteries, posterior mesenteric artery, internal spermatic arteries, utero-ovarian arteries, lumbar arteries, arteries of the pelvic limb, internal iliac artery.

Veins; pulmonary veins, systemic veins, venna homiazygos, anterior vana cava, jugular vein, veins of the thoracic limb posterior venna cava, veins of the pelvic limb, portal vein.

The lymphatic system; Lymphatic glands, the thoracic duct, lymph glands of the head, neck, fore limb, thorax, abdomen, pelvis, and hind limb.

Neurology : The study of the nervous system—central and peripheral.

The central nervous system. The brain—cerebrum, cerebellum, pons and medulla; spinal cord and the meninges—duramater, arachnoides and piamater.

The peripheral nervous system; Cranial nerves—12 pairs; spinal nerves—42 pairs with their ganglia, placing emphasis on the phrenic nerve, and the brachial and lumbo-sacral plexuses.

The sympathetic system (autonomic).

Aesthesiology : The Skin, appendages of the skin, horn and hoof; the organ of taste (gustatory apparatus); the organ of smell (nostrils); the organs of vision (eyes), the organs of hearing (ears).

Practical ;

Fixing of the subject, preservation of the subject, dissection of the ox (myology, splanchnology, respiratory system, uro-genital system), angiology (main arteries and veins, lymph glands), neurology (brachial and lumbar plexuses; limbs) thoracic, abdominal and pelvic cavities.

Sketching of the dissections—surface markings of the organs on the body, identification of the splanchnic organs, Making of models and casts. Preservation of museum specimens.

Text Books :

1. The ICAR scientific monograph on Anatomy of the Ox (under preparation).
2. 'Anatomy' of the Domestic Animals' by Sisson & Grossman.

Reference Books :

1. 'Comparative Anatomy of the Domesticated Animals' by Mc. Fydean.
2. Topographic Anatomy of (1) Limbs (2) Thorax and Abdomen. (3) Head and Neck of the Horse' by Bradley.
3. 'Dissection of the Dog' by Bradley.
4. 'Guide to the Dissection of the Dog' by Miller.
5. 'Guide to Dissection of Bovine' by Grossman.

Pharmacology and Materia Medica

Lectures : 10 clock hours.

Practical : 120

Materia Medica

Introduction and definitions : Materia Medica, Pharmacology. Pharmacy, Pharmacopoeia, I.P. B.P., B Vet. Codex; B.P.C.C.; U.S.A.P.

Source of drugs : Alkaloids, glucosides saponins, neutral principles, fixed oils, fats, waxes, resins, oleo-resins, gum-resins, gums, balsams, hormones and enzymes.

Definitions and actions of drugs : Sialagogues, anti-sialics, anti-sialics, demulcents, stomachics, gastric stimulants, gastric sedatives, carminatives, emetics, antacids, purgatives, intestinal, astringents, anti-zymotics, anthelmintics, cholagogues, diuretics, vesical sedatives, lithon- triptics, urinary antiseptics, aphrodisiacs, anaphrodisiacs, ecobolics, emmenagogues, galactagogues, anti-galactagogues, cardiac stimulants, cardiac tonics, cardiac depressants, vaso-constrictors, vaso-dilators, expectorants, respiratory stimulants, respiratory sedatives, cerebral sti- mulants, cerebral sedatives, hyphotics, narcotics, anodynes, anti-spas- modics, anaesthetics, mydriatics, myotics, tonics, haematinics, alterati- ves, febrifuges, diaphoretics, anhydrotics, counter-irritants, rubefacients, vesicants, pustulants, caustics, styptics, astringents, emollients, parasiti- cides insecticides, antibiotics, antiseptics, disinfectants, deodorants, anti- pruritics, keratolytics, anti-histaminics.

Systematic Materia Medica : Description of drugs with reference to the following points :—

Latin name, official English name, English synonyms, equivalent names in Indian languages, source, chemical composition, active ingredients of organic preparations, incompatibility, physical characters, e. g. form, colour, taste, solubility, action of light and heat; route and frequency with which ordinarily administered, dosage for cattle, horse, dogs and where necessary for other species, contra-indications, actions and use of the pharmacopoeial and other recognised preparations of the following, including indigenous drugs commonly used in veterinary practice.

Alkalies : Potassium, Sodium and ammonium.

Alkaline earths : Calcium magnesium and barium.

Heavy metals : Aluminium, lead, zinc, copper, silver, mercury, iron, cobalt and bismuth.

Metalloids : Antimony, arsenic, chromium and phosphorus.

Non-metals : Oxygen, sulphur and carbon.

Halogens : Chlorine, bromine, iodine and fluorine.

Acids : Sulphuric, nitric, hydrochloric, picric, acetic, oxalic, benzoic and hydrocyanic.

Water.

Volatile general anaesthetics : Chloroform, ether, trichlorethylene, ethyl chloride.

Narcotics : Alcohol, bromethol, tribromo-ethyl alcohol, chloral hydrate, barbiturates, opium, Cannabis indica, hyoscyne hydrobromide.

Local anaesthetics : Cocaine, procaine hydrochloride, benzocaine etc.

Parasympathetic depressants : Belladonna, hyoscyamus, stramonium, pethidine, vasakha, tobacco and lobelia.

Muscle relaxant : Curare.

Parasympathetic stimulants. Physostigmine, pilocarpine, arecoline, acetylcholine carbachol.

Nervine stimulants : Nuxvomina.

Cardiac depressants : Aconite, veratrine.

Cardiac tonics : Digitalis, seropanthus, squill.

Vaso-constrictors : Adrenaline, ephedrine.

Vaso-dilators : Amyl nitrite, sodium nitrite, spirit of nitrous ether, trinitro-glycerine.

Anti-histaminics : Mepyramine maleate, promethazine hydrochloride.

Expectorants : Ipecacuanha, liquorice.

Bitters : Calumba, quassia, gentian, aurantia cortex, chiretta, kalmegh, aristolochia, calamus.

Digestive ferments : Malt, diastase, pepsin, papain, pancreatin, trypsin.

Sweetening agents : Treacle, sucrose, lactose, honey, saccharine.

Vegetable purgatives : Aloes, rhubarb, cascara, senna, colocynth, jalap, ipmoea, gamboge, croton oil, podophyllum, castor oil, linseed oil.

Laxatives : Agar, ispaghul, phenolphthaletin.

Choleratics : Fel bovinum.

Emollients and demulcents : Olive oil, ground-nut oil, linseed oil, sesame oil, cotton-seed oil, mustard oil, coconut oil, oil of the obroma, liquid paraffin, glycerine, liquorice, gum acacia, gum tragacanth, starch.

Vegetable astringents : Galls, tannic acid, catechu, kino, myrobalans, kurchi.

Volatile oils : Clove, cardamom, coriander, dill, anise, cinnamon, rose mary, volatile mustard oil, peppermint oil, camphor, menthol and thymol.

Resins : Benzoin, myrrh, asafoetida, balsams of Peru and of Tolu.

Anthelmintics : Round worm remedies—santonin, oil of chenopodium, nicotine sulphate, carbondi-sulphide, tetrachloro-ethylene, hexylre-sorcinol, butyl chloride, phenothiazine, piperazine compounds.

Tapeworm remedies—areca, areceline hydrobromide, nemural, arecoline-acetarsol, dishlorophen, kamala, atebine.

Fluke remedies—hexachlore-ethane, carbontetrachloride, extract of male fern, antimosan, anibioma-inc, tartar emetic.

Ecbolics : Ergot, pituitrin.

Aphrodisiacs : Yobimbine; sex hormones.

Ointment bases : Hard paraffin, soft paraffin, liquid paraffin, lard, lanolin, suet, waxes, gelatin, keratin.

Detergents : Soaps cetrimide.

Counter-irritants: Cantbaridine.

Drugs acting on metabolism; Thyroid, thiouracil, parathyroid, pancreas, liver extract. (Non-specific proteins, normal serum, sterile milk). A. C. T. H.

Nutrients: Glucose, fructose, vitamins, fish-liver oils, yeast, and nuclein.

Antipyretics: Phenazone, acetanilide, pbenacetin, cinchona, quinine and quinine substitutes, acetylsalicylic acid and its derivatives.

Insecticides: Dicrophane (D. D. T.), benzene hexachloride, benzyl benzoate, derris, pyrethrum, chrysarobin, paraffin oil, organic phosphorous compounds.

Coal tar antiseptics and disinfectants: Tar, Stockholm tar, Burgandy pitch, phenol, creosote, cyllin, lysol, phenyle, benzene, resorcin, naphthalene and betanaphthol.

Dyes: and drugs acting against protozoa: Acriflavine, euflavine brilliant green, crystal violet, methylene blue, trypan blue, phenamidine, propamidine isethionate, quinapyramine chloride, quinapyramine sulphate, quinuronium sulphate, suramin, dimidium bromide, nitrofurans.

Sulpha group of drugs.

Antibiotics.

Indigenous drugs: Ajowan, sweet flag, *Butea frondosa*, coriander, cumin, dill seeds, embelica, myrobalans, turmeric, anise, ginger, capsicum. *Allium sativum*, *Allium cepa*, *Piper nigrum*, asafoetide, black salt, vasakha, aristolochia, cubebs, punarnava, kurchi, thulsi, acacia bark, tobacco leaves.

2. Pharmacy:

Pharmacy.

Prescription and prescription written; terms and abbreviations used in prescription writing.

Incompatibility: Physical, chemical and pharmacological.

Important pharmaceutical processes.

Different types of pharmaceutical preparations.

Various method of administering drugs.

Weights, measures and symbols: Apothecary, Imperial and Metric systems. Indian weights and measures. Domestic measures. Equivalents of the different system.

Strength of solutions expressed as percentage.

Pharmacy fittings.

General directions for weighing, measuring and dispensing.

Dispensing of powders, lotions, mixtures, ointments, liniments, electuaries etc. indicating dosage, labelling and despatch.

Preparation of common forms of pharmaceutical preparations—ointments, lotions; liniments, emulsions, boluses, pills, tinctures, aquae, mixtures, powders etc.

Custody of poisons and precautions with reference to their dispensing. Practical acquaintance with, and identification of, drugs commonly used in veterinary practice.

3. Pharmacology

General principles of pharmacology : Nature of drug action on animal tissues, utilisation of animals in studying drug action, toxicity of drugs, primary, secondary, local and remote actions,

Factors modifying action of drugs : Age, sex, species, weight, tolerance, idiosyncrasy, mode and frequency of administration, form of medicine, nature of disease, rate of excretion, dosage, cumulative effect; synergism antagonism in drug action; absorption, excretion and fate of drugs.

Pharmacology of :—

Drugs acting on the nervous system : Intoxicants, anaesthetics, narcotics, hypnotics, local anaesthetics, antispasmodics and nerve stimulants.

Drugs acting on the cardio-Vascular system : cardiac stimulants, cardiac tonics, cardiac depressants, vasoconstrictors and vasodilators.

Drugs acting on the respiratory system : expectorants, respiratory stimulants, respiratory sedatives, pulmonary antiseptics.

Drugs acting on the gastro-intestinal tract : sialagogues, antisialics, demulcents, stomachics, gastric stimulants, gastric sedatives, gastric and intestinal astringents and antiseptics, gastric tonics, carminatives, emetics, antacids and purgatives.

Drugs acting on the liver : choleretics, cholagogues and biliary antiseptics.

Drugs acting on urino-genital system : diuretics, vesical sedatives, vesical tonics, lithontriptics, urinary antiseptics, aphrodisiacs, anaphrodisiacs, ecboics, uterine sedatives, galactagogues; anti-galactagogues, mammary antiseptics, sex glands and their pharmacology.

Drugs acting on the skin : counter-irritants, cold and hot applications, poultices, styptics, astringents, emollients and parasitocides.

Drugs acting on the eye : mydriatics, myotics, and eye antiseptics.

Drugs acting on metabolism : febrifuges, diaphoretics, tonics, haematinics, alteratives, vitamins

Pharmacology of gland products. thyroid, pancreas, adrenal, pituitrin, liver extract, bone marrow, muscle extract, ovarian extracts, etc.

Drugs acting as internal and external haemostatics.

Antiseptics and disinfectants for general use.

The pharmacology of sulphur drugs and antibiotics.

Chemotherapy : Principles of chemotherapy; relationship between chemical structure and pharmacological action of drugs.

Chemotherapy of parasitic infections ; Anthelmintics acting on cestodes, trematodes and nematodes. Drugs acting on trypanosomes, spirochaetes, piroplasms and coccidia.

Practical Pharmacology :

The different stages of chloroform anaesthesia, danger signals, artificial respiration and other measures for resuscitation.

Action of strychnine and curare in any mammal.

Action of drugs on pupil of eye in any mammal; dilators (atropine and cocaine), constrictors (pilocarpine and Physostigmine).

Demonstrations relating to applied physiology and pharmacology on mammalian organs (heart, intestines, kidney) should form essential part of practical training in pharmacology.

Text Books :

1. 'Hoare's Veterinary Materia Medica and Therapeutics' by J. R. Greig.
2. 'Veterinary Materia Medica and Therapeutics' by Symonds and Mills.
3. 'Veterinary Pharmacology and Therapeutics' by Meyer Jones.
4. 'Veterinary Toxicology' by R. J. Garner.

Reference Books :

1. British Pharmacopoeia.
2. Veterinary Pharmacopoeia.
3. British Pharmaceutical Codex.
4. British Veterinary Codex.

5. Indian Materia Medica by Nadkarni.

6. Indian Pharmaceutical Codex.

Pathology :

Lectures — 105 clock hours.

Practical — 120 „ „ .

General Pathology :

Health and disease; causes of disease, including predisposing factors.

Inflammation : Types of inflammation, cells of inflammation and their functions; inflammatory exudate; suppuration; ulcer, healing and repair of wounds; granulomatous inflammation; healing of bone; regeneration of cells/tissues.

Disturbances of cell metabolism (degenerations and infiltrations) : Cloudy swelling, mucoid degeneration, hydropic degeneration, fatty changes, hyaline degeneration amyloid infiltration, calcification and calculi, pigmentary changes (endo-genous and exo-genous) gouty infiltration.

Necrosis, gangrene. Post-mortem changes.

Disturbance in the nutrition and growth of cells. Atrophy, hypertrophy, hyperplasia, metaplasia, aplasia, anaplasia, hypoplasia.

Disturbances of the circulation : Hyperaemia (active and passive) haemorrhage, thrombosis, embolism infarction, oedema.

Neoplasms : Neoplasia, aetiology, macro and micro-scopic characteristics of the common benign and malignant tumours of domestic animals and birds. Cysts.

Fever — General consideration of the pathology of fever.

Systemic Pathology :

Aetiology and pathology (gross and microscopic appearance, sequelae etc.) of diseases of the cardiovascular, haemopoietic, digestive, respiratory, urinary, reproductive, nervous, locomotor, and endocrine systems.

General pathology of the common nutritional disorders and toxicoses.

Specific Pathology :

Pathogenesis and general pathological features of the following diseases:—

Anthrax, black-quarter, necro-bacillosis, pasteurellosis, brucellosis, salmonellosis, mastitis, Joint-ill, tuberculosis, Johne's disease, actin-

obacillosis, actinomycosis, gladders, epizootic lymphangitis, fowl spirochaetosis, contagious pleuropneumonia, contagious caprine pleuropneumonia, piroplasmosis, theileriosis, coccidiosis; rinderpest, Ranikhet diseases, foot-and-mouth disease, canine distemper, pox diseases, rabies, encephalomyelitis, avian leucosis complex.

Practical :

Post-mortem examination.

Collection, dispatch and examination of material for pathological examination.

Study of gross and microscopic changes in important pathological conditions.

Important procedures in clinical pathology.

Text Books :

1. 'Animal Pathology' by R. A. Runnels
2. 'Gaiger and Davies' Veterinary Pathology and Bacteriology by Davies.

Reference Books :

1. 'Text Book of Pathology' by William Boyd.
2. 'Veterinary Clinical Pathology' by Coffin.
3. 'Introduction to Pathology' by Wright.
4. 'Pathological Histology' by Ogilvie.
5. 'Special Pathology and Therapeutics of the Diseases of Domestic Animals' by Hutyra, Marex and Manringer.
6. 'Veterinary Necropsy Procedures' by T. C. Jones.

Bacteriology

Lectures — 135 clock hours.

Practical — 150 „ „

General Bacteriology :

Historical outline; broad classification of bacteria (General considerations). Morphology of bacteria, capsula, flagella and motility, sporulation, staining characters; biology, habitat, growth and reproduction, cultivation and growth requirements of bacteria; bacterial metabolism; chromogenesis. Resistance of bacteria to physical and chemical agents. Disinfection. Import of antibiotics and sulpha drugs and their mode of action.

Bacterial variation.

Pathogenic Bacteria ;

Morphology, important cultural characters, biochemical activities and pathogenicity of the important species of the following, and aetiological, pathological, diagnostic and immunological aspects of the diseases caused by them.

Staphylococcus, Streptococcus, Vibrio, Proteus, Bacterium, Salmonella, Shigella, Pasteurella, Haemophilus, Brucella, Erysipelothrix, Actinobacillus, Listeria, Mycobacteria, Corynebacterium, Fusiformis, Pfeifferella, Bacillus, Clostridium, Borrelia and Leptospira.

Pleuro-pneumonia group of organisms.

Rickettsiae.

Animal viruses, including bacteriophage: Their nature and general properties, methods of isolation and study, morphology, habitat, tropism, inclusion bodies, cultivation, resistance and pathogenicity, with special reference to the viruses responsible for the following diseases, and their aetiological, pathological, diagnostic and immunological aspects.

Cow-pox, sheep pox, goat pox, fowl pox, contagious pustular dermatitis; foot-and-mouth disease, rinderpest, Ranikhet disease, swine fever, canine distemper, infectious laryngo-tracheitis; infectious bronchitis, avian leukosis complex; equine encephalo-myelitis; fowl tumours, warts.

Mycology ;

Elementary study of the following pathogenic fungi, and of the aetiological, pathological, diagnostic and immunological aspects of the diseases caused by them.

Cryptococcus, Trichophyton, Microsporum, Achorion, Aspergillus, Rhinosporidium.

Immunology :

Antigens, antibodies, antigen-antibody reactions; lysis, complement and its fixation.

Pathogenesis: Invasion, infection, virulence, toxins. Koch's postulates.

Susceptibility and resistance to infection, phagocytosis, opsonins and bacteriotropins.

Immunity, various types and grades of immunity, and methods of immunization. Interference phenomenon pre-munition carriers.

Anaphylaxis, allergy and hypersensitiveness.

Practical.

General Bacteriological Technique :

Collection, preservation and despatch of material for laboratory examination.

Staining procedures, simple stains, Gram's stain, acid-fast stain, staining of capsule, spores and flagella.

Examination for motility

Methods of sterilization, use of laboratory apparatus for sterilization, incubation etc.

Preparation and use of common culture media pH estimation, isolation of bacteria and propagation of cultures, aerobic and anaerobic technique. Counting of bacteria.

Study of important species of micro-organisms.

Microscopical and cultural examination of common varieties of pathological material. Examination of material for ringworm. Bacteriological examination of water, milk etc.

Virus Technique :

Filtration, centrifugation, technique of egg inoculation; demonstration of inclusion bodies,

Immunological Tests :

Agglutination test; precipitation test; complement fixation test (demonstration only) mallein, tuberculin and johnin tests.

Animal inoculation by various routes.

Text Books :

1. 'Gaiger and Davies' Veterinary Pathology and Bacteriology' by Davies.
2. 'Veterinary Bacteriology and Virology' by Merchant and Packer.

Reference Books :

1. 'Topley and Wilson's Bacteriology and Immunity' by Wilson and Miles.
2. 'Special Pathology and Therapeutics of the Diseases of Domestic Animals' by Hukyra, Marex and Manninger.
3. 'Manual of Veterinary Bacteriology' by Kelser and Schoening.

Parasitology :

Lectures — 90 clock hours.

Practical — 90 „ „

1, Protozoology :

Lectures — 25 clock hours.

Practical — 25 „ „

Systematic account, life-history and pathogenicity of the following protozoan parasites; the diseases caused by them, their diagnosis, control and treatment.

Entamoeba, Trichomonas, Histomonas, Isospora, Eimeria, Balantidium, Leishmania, Trypanosoma, Plasmodium, Babesia, Theileria, Gonoderia, Anaplasma, Aegyptianella, Haemoproteus, Leucocytozoon, Hepatozoon.

Other parasites : Toxoplasma; Sarcosporidia,

Practical :

Collection, preparation and examination of material for the study of protozoan infections.

2. Entomology :

Lectures- 30 clock hours.

Practical—30 „ „

Distinguishing characters of Arthropods, Insecta and Arachnida.

Importance of arthropods in relation to health of livestock; their direct damage as parasites or pests and indirect damage as vectors of diseases of animals.

Brief account of the morphology and functions of the different systems of organs (external and internal) and the life-history of an insect and an arachnid (tick).

Distinguishing characters of Diptera, Anoplura, Simuliidae, Hemiptera, Acarina and Pentastomida.

General morphology (external), life-history habits- economic importance and control of the important species of the following insects :

Diptera : Culex, Anopheles, Aedes, Culicoides, Phlebotomus, Simulium, Tabanus, Haematopota, Chrysops, Musca, Stomoxys, Siphona (Lyperosia), Haematobia, Hippobosca, Melophagus, Pseudolynchia, Hypoderma, Gastrophilus, Gestrus, Cephalopsis, Galliphora, Lucilia, Chrysomyia, Sarcophaga.

Anoplura : Haematopinus, Linognathus, Solenopotes, Menopon, Menacanthus, Trichodectes, Heterodoxus, Damalinia (Bovicola), Goniodes, Liparus, Goniocotes.

Siphonaptera : Ctenocephalides, Ceratophyllus, Echidnophaga.

Hemiptera: Cimex.

Acarina: Argas, Ornithodoros, Otobius, Ixodes, Boophilus, Hyalomma, Haemaphysalis, Rhipicephalus; Amblyomma. Sarcoptes. Psoroptes. Notedres. Chorioptes. Otodectes. Cheimodocoptes; Demodex. Bdellonyssus (Liponyssus). Dermanyssus. Cytodites; Harvest mites (Trombicula). Linguatul.

Hirudinea: Brief account of the morphology, life-history, habits, harmful effects, dislodgement and control of the common Indian leeches belonging to the following genera—Haemadipsa, Hirudinaria, Hirudo, Dinobdella, and Limnatis.

Control of insects—chemical and biological.

Practical :

Collection, preservation, identification and despatch of specimens of common insects, ticks and mites of veterinary importance and of such material as skin scraping.

Practical application of insecticides—hand dressing, dips, sprays, dusts.

3. Helminthology :

Lectures—35 clock hours.

Practical—35 „ „

Definition and importance of Helminthology in veterinary science. Broad classification of helminths and general characters of Trematoda, Cestoda, Nematoda and Acarothocephala.

Types of life-histories.

Host and organ specificity, modes of infection pathogenicous effects of parasites on their hosts; resistance and immunity, effects of nutrition of the host on its helminthic infection.

Classification, morphology, main distinguishing features of allied species, life-histories, measures for control of the principal representatives of the under-mentioned genera found in Indian domestic animals and treatment of their infections. General characters and biology (in outline) of the intermediate hosts of helminth parasites of veterinary importance in India.

Trematoda: Fasciola, Fasciolopsis, Dicrocoelium, Eurytrema, Opisthorchis, Echinostoma, Prosthogonimus. Cymbiforma, Sclistosoma, Orientobilharzia, Paramphistomum, Cotylophoron. Gastrothylax, Gastrodiscus, Pseudodiscus.

Cestoda : Davainea, Raillietina, Cotugnia, Hymenolepis, Diploidium, Anoplocephala, Moniezia, Avitellina, Stilesia, Mesocostoides, Taenia, Echinococcus, Diphylobothrium.

Nematoda : Trichuria, Capillaria, Trichinella, Strongyloides, Strongylus, Oesophagostomum, Trichonema, Triodontophorus, Ancylostom, Bunostomum, Haemonchus, Mecistocirrus, Trichostrongylus, Ostertagia, Cooperia, Gaigeria, Syngamus, Stephanurus, Metastrongylus, Dictyocaulus, Protostrongylus, Mallerius, Vastrestrongylus, Dioctophyma, Ascaris, Toxascaris, Ascaridia, Toxocara, Oxyuris, Heterakis, Spirocerca, Habronema, Gongylonema, Acuaria, Tetrameres, Thelazia, Gnathostoma, Parafilaria, Dirofilaria, Onchocerca, Stephanofilaria, Setaria, Dracunculus.

Acarthocephala : Macracanthorhynchus.

Practical :

Collection, fixation, preservation and study of the important helminth parasites and their eggs and larvae. Clinical diagnostic methods, such as faecal examination, egg counting, faeces culture and blood and tissue examination. Study of the broad characters of some common and typical specimens of intermediate hosts, particularly Indoplanorand and Limonea.

Text Books :

1. 'Monning's Veterinary Helminchology and Entomology' by G. Lapage.
2. 'Veterinary Protozoology' by U F. Richardson.

Reference Books :

1. 'The Internal Parasites of Domestic Animals' by T. W. M. Cameron.
2. 'Veterinary Helminchology' by Morgan and Hawkins.
3. 'Veterinary Protozoology' by Morgan and Hawkins.
4. 'A Veterinary Entomology for India' by Illebar and Sen (in press).

Animal Nutrition :

Lectures--75 clock hours.

Practical--90 ,, ,,

Introduction :

The role of animal nutrition in livestock industry and human welfare; feeding practices of various classes of livestock including poul-

try; prosperity through better feeding of animals; soil, plant, animal and human inter-relationship.

General :

Metabolism of carbohydrates, fats, proteins, minerals (including trace elements) and vitamins in general, with special reference to malnutrition, deficiency diseases and nutritional infertility.

Feeding stuffs, their general properties and classification; knowledge of (a) water, crude protein, ether-extract, crude fibre, ash, and nitrogen-free extract; (b) calcium, phosphorus, magnesium, potassium, sodium, sulphur, chlorine, copper, cobalt, iodine and manganese; and (c) vitamin contents. Digestibility coefficients; total digestible nutrients; nutritive ratio; biological value; gross, metabolisable and net energy; starch equivalent; various measures of food energy, their usefulness and limitations; feeding standards; digestible crude protein; calcium and phosphorus content. Feeding schedules for various classes of livestock including poultry.

Applied Nutrition :

Preparation and computation of rations under various conditions (maintenance, growth and production) of feeding, including cost, for different types of livestock, including poultry. Antibiotics, hormones and other growth-stimulating factors in animal nutrition; various mineral and vitamin supplements. Subsidiary feeds and feeding of livestock during famine.

Calf-rearing: Importance of colostrum, schedule of milk allowance, milk substitutes and economic ways of feeding calves.

Work : Feeding of work animals.

Meat production : Feeding of pigs, poultry, sheep and goats; concentrates for fattening.

Wool production : Feeding of sheep for wool production; pastures for sheep grazing.

Egg production : Feeding of poultry, including all aspects of poultry nutrition; requirement of various amino-acids, vitamins and minerals for egg production.

Fodder Conservation and Processing :

Fodder conservation : Various methods of fodder conservation, hay and silage making.

Fodder processing : Improvement of poor roughages; chaffing of straws, hays, green fodder; grinding, crushing, soaking, heating or cook-

ing; storage of various classes of grains and oil-cakes; ready to feed mixtures for poultry.

Harmful and Toxic Foods :

Mouldy and decomposed foods; plants poisonous to livestock (general considerations).

Practical :

Identification of common concentrates and roughages. Quantitative analysis of (a) moisture, (b) crude protein, (c) ether extract, (d) ash, (e) fibre, (f) calcium, and (g) phosphorus in common feed stuffs. Carotene estimation (demonstration only). Use of photo-electric colorimetric colorimeter (demonstration only). Digestibility experiments (demonstration only). Silage and hay-making practices.

Text Books :

1. 'Animal Nutrition and Veterinary Dietetics' by R. G. Lint.
2. 'Animal Nutrition' by Maynard and Loosli.
3. 'Animal Nutrition' by Sheehy.

Reference Books :

1. 'Animal Nutrition Research in India' by K. C. Sen.
2. 'Feeding of Farm Animals in India' by P. E. Lander.
3. 'Rations for Livestock' by H. E., Woodman.
4. 'Feeds & Feeding' by Frank B. Morrison.
5. 'Feeding of Farm Animals in India' by Lancer.

Dairy Science and Food Hygiene :

Lectures — 90 clock hours.

Practicals— 90 „ „

1. Dairy Science and milk Hygiene

History of Dairying.

Anatomy and physiology of the mammary gland (recapitulation).

Physiology of lactation. theories of milk secretion; 'letting down' and 'holding up' of milk, Art of milking, hand milking, machine milking.

Physical characteristic of milk-colour, reaction, specific gravity, viscosity, specific heat, electrical conductivity, refractive index, boiling point, freezing point, creaming curd tension.

Chemical characteristics of milk-composition of milk of different species of animals; butter-fat, milk proteins, lactose, minerals, vitamins,

cellular content, enzymes, gases; commercial importance of the various constituents of milk; comparative study of milk of the cow, buffalo and goat.

Colostrum—appearance, composition, importance in feeding of the new-born.

Factors affecting the composition and yield of milk—effects of heredity, stage of lactation, pregnancy, season, nutrition, age, management factors; use of hormones and iodinated casein for increasing milk production.

Bacteriology of milk—bacteria, yeasts and moulds in milk, and the types of fermentations brought about by them; changes undergone by milk on keeping; clotting of milk.

Production of clean milk—sources of contamination of milk, principles involved in clean milk production; taints in milk.

Milk and public health—nutritive value of milk; disease of animal communicable to man through milk, milk-borne infections, and measures for preventing these.

Heat treatment of milk—Pasteurisation; thermophilic and thermophilic bacteria; sterilisation; uperisation.

Homogenisation; toned milk.

Refrigeration of milk.

Grading of milk—principles; designated milk in U. K. etc; milk standard in India.

Quality tests—specific gravity, fat, acidity, alcohol precipitation test, sediment test, methylene blue reduction test, resazurin test, presumptive coliform test; phosphatase test; care of milk on the farm, in the creamery, and at home.

Adulterants of milk and their detection; application of presumptive milk standards.

Preservatives and their detection.

Transport and marketing of milk.

Dairy equipment and its care; cleaning and sterilisation; effect of metals on milk; effect of milk on metals.

Milk products—creams and cream separation (skim-milk), butter and butter-making (butter-milk), ghee and ghee-making; cheese and cheese-making (whey; fermented milks (indigenous and foreign); milk powder, evaporated milk, condensed milk; milk by products (casein, lactose).

Adulteration of butter and ghee, and its detection.

Important breeds of dairy cattle, buffaloes and goats.

Judging of dairy animals; principles involved in selection for high milk production.

Dairy farming and dairy herd management; herd book; dairy records.

Dairy economics.

Practical :

1. Sampling of milk and milk products.
2. Physical examination of milk.
3. Determination of total solids in milk by different methods.
4. Estimation of fat percentage in milk, skim-milk and cream.
5. Determination of acidity in milk and cream.
6. Estimation of lactose in milk.
7. Determination of ash content of milk.
8. Estimation of proteins in milk.
9. Detection of adulteration of milk.
10. Detection of preservatives in milk.
11. Tests for heated milk.
12. Score card for milk and cream.
13. Estimation of moisture in butter and ghee.
14. Estimation of fat in butter.
15. Score card for butter.
16. Bacteriological examination of milk—plate count, presumptive coliform test, methylene blue reduction test, resazurin test.
17. Preparation of cream, butter, ghee, cheese and *dahi*.
18. Visit to selected dairy farms, milk plants and creameries to study the methods of production and handling of milk.
19. Judging of dairy cattle, buffaloes and goats,

Text-Books :

1. 'Milk Production and Control' by Harvey and Hill.
2. 'Principles and Practice of Milk Hygiene' by Clein.
3. 'A Laboratory Manual of Milk Inspection' by Aggarwala and Ahmad.

Reference Books :

1. 'Indian Dairying Manual' by Warner.
2. Meat Inspection :

General Principles. Nature and problems of meat inspection. The present condition of meat inspection in civilised countries.

Food animals. Humane slaughter of animals. Examination of animals before slaughter. Methods of slaughter. Construction of slaughter houses. Dressing of carcasses. Flaying and hide improvement. Inflation of carcasses. Post-mortem inspection.

Physical characters of meat : Colour, consistency, odour, etc. of normal flesh and organs of various food animals. Differentiation of flesh and organs of various animals, including non-food animals, such as dog and cats. Substitution and falsification of meat. Characters of good flesh.

Physiological conditions of importance in meat inspection. Chief points and procedures of inspection. Conditions rendering flesh unwholesome for human consumption. Inspection of imported meat. Inspection of diseased organs. Location and examination of lymph nodes.

Abnormal appearances, odour etc. of the carcase brought about by any of the following causes :—Slaughter during state of fatigue or when moribund, death by suffocation, defective bleeding, etc. 'Fevered flesh'; immaturity, including foetal flesh; advanced pregnancy, emaciation and poorness, administration of medicines, putrefaction, growth of moulds; phosphorescent flesh, artificial colouring. Differences in the carcase due to sex and age. Local names,

Preservation of meat : (i) By action of cold—simple cold storage, chilling and freezing; (ii) by action of heat; (iii) by dehydration; (iv) by salting, pickling and smoking; (v) chemicals, e. g. boric acid, sulphurous and salicylic acids.

Disposal of unsound meat. Detailed instructions for examination and disposal of tuberculous carcasses or parts, and of carcasses and parts infested with parasites. Conditions requiring 'seizure' of parts or whole of carcase in case of the various pathological conditions commonly met with.

Unsaleability. Public health aspects of meat inspection. Disease conditions in meat caused by bacteria, pathogenic and non-pathogenic for man, and by animal parasites. The law relating to meat inspection.

Hygienic control of meat at meat shops. Carcase yield. Slaughter-house by-products, Hides and skins.

Practical :

Demonstrations to be arranged in the local and other slaughter house inspection of meat and slaughter-houses etc. Ante-and post-mortem examinations. Dressing of carcases. Procedure of examination of carcases' parts and organs. Tests for horse flesh and putrefaction of meat. Practice in differentiation of flesh, parts and organs of different food animals.

Books :

1. Edelman. Eichhorn & Mohler: 'Text-Book of Meat Hygiene'.
2. Oestervag: Test-book of Meat Inspection.
- .. Aggarwala: 'Class Notes on Meat Inspection'.
4. Littlejohn: 'Meat and its Inspection'.
5. Thornton: 'Text-book of Meat Inspection'.

Medicine.

(including TOXICOLOGY and JURISPRUDENCE).

Lectures—150 clock hours.

Practical—150 „ „

1. Clinical Medicine :

General remarks on the aetiology, symptoms, course, sequelae, diagnosis, prognosis and treatment of disease. Symptoms shown by different systems.

Systemic diseases :

Etiology, symptoms, cause, clinical pathology, diagnosis, prognosis, and therapeutics of diseases of the following :—

Digestive system : Stomatitis, aphtha, glossitis, pharyngitis, parotitis, oesophagitis, oesophagismus, choking, dilation of oesophagus gastritis, gastric impaction, tympanites; colic spasmodic, flatulent and impactive; reticulitis, abomasitis, enteritis, intestinal lithiasis. Foreign bodies, vomiting, indigestion, constipation, diarrhoea and dysentery.

Peritonitis, ascites.

Congestion of the liver, hepatitis, jaundice, biliary congestion, cholelithiasis, cirrhosis of the liver, liver abscess.

Respiratory system : Nasal catarrh, epistaxis, laryngitis bronchitis, asthma, pulmonary hyperaemia haemoptysis, pneumonia, emphysema, pleurisy hydrothorax, pneumothorax.

Circulatory system : Pericarditis, myocarditis, endocardites hypertrophy and dilation of the heart; anaemia, leukaemias.

Lymphangitis. lymphadenitis.

Urinary system : Nephritis, renal colic, albuminuria, azotu haematuria, haemoglobinuria, incontinence of urine, uraemia; cystitis, urethritis urinary lithiasis. Spasm, stricture, and rupture of the bladder.

Nervous system : Sun-stroke, lightning-stroke, heat-stroke concussion of brain, epilepsy, paralysis, apoplexy, eclampsia, chorea, encephalitis, meningitis, encephalo-myelitis.

Skin : Urticaria, dermatitis, erythema, eczema, psoriasis, pityriasis, alopecia. Deficiency diseases.

Osteodystrophia fibrosa, rickets, osteomalacia, caries. xerophthalmia, scurvy, anhidrosis, pica, night blindness.

Endocrine and metabolic disorders :

Goitre, diabetes mellitus, ketosis, milk fever. Unclassified diseases.

Rheumatism; non-sweating in horses.

Important systemic diseases and disease conditions peculiar to camels, pigs and poultry.

2. Preventive Medicine

General : Definition of specific, sporadic, contagious infectious, epizootic, enzootic, panzootic; septicaemia, bacteram pyaemia, toxæmia.

Modes of spread. General principles of epidemiology.

Specific diseases : Study of the incidence, aetiology, mode of infection, symptoms, course, diagnosis, prognosis, treatment, prevention and control of the following diseases.

Bacterial diseases . Actinomycosis, actinobacillosis; anthrax; tetanus, black—quarter, enterotoxaemia, braxy; infectious abortion, pasteurellosis, glanders and farcy; tuberculosis, Johne's disease, strangles, jointill, infectious mastitis, pleuro-pneumonia of cattle and goats, spirochaetosis of dog and fowl, white scour, bacillary white diarrhoea, caseous lymphadenitis.

Virus diseases . Canine distemper, encephalo-myelitis, ephemeral fever, foot-and-mouth disease, fowl pox, sheep pox, goat pox, contagious

pustular dermatitis, rabies rinderpest, swine fever, Ranikhet disease, infectious larvagottrachetitis, avian leucosis complex.

Mycotic diseases : Aspergillosis, epizootic lymphangitis, ring-worm, favus.

Common parasitic diseases : Coccidiosis, piroplasmosis, theileriosis, trypanosomiasis; liver-flue disease, amphistomiasis, nasal granuloma; mange.

3. Toxicology

Poisons : Definition, general classification, modes of action, factors affecting their action.

Common causes of poisoning in animals; malicious, accidental; doping.

Diagnosis of poisoning; postmortem examination in suspected cases of poisoning; collection, preservation and despatch of material for chemical analysis.

General lines of treatment.

The source, symptoms, diagnosis, treatment, postmortem appearances, prevention etc. of poisoning caused by the following :—

- (i) Mineral or inorganic substances : Acids and alkalies, ammonia compounds, metallic compounds (especially sodium chloride, bleaching powder, iodides, fluorine compounds), nitrates and gases (especially carbon monoxide).
- (ii) Organic compounds : Anaesthetics; anthelmintics, especially carbon tetrachloride, oil of cheopodium, nicotine sulphate, phenothiazine; pesticides--insecticide ascaricides, fungicides, herbicides, and rodenticides (chlorinated hydrocarbons, organic phosphorus compounds, ANTU, BAL, Warfarin etc.); antiseptics and disinfectants; sulphonamides; antibiotics; drugs used against protozoan infections; hormones (oestrogens etc.); vitamins-A and D; cyanides; opium alkaloids; cannabis indica; stimulants (e.g. strychnine); chlorinated naphthalenes.
- iii) Poisonous plants : *Sorghum vilgare*, *S. halepense*, and other cyanogenetic plants, grasses and trees; *Ricinus communis*; *Croton tiglium*; *Linum usitatissimum*; *Datura stramonium*; *Salanum tuberosum*; *Nictiana tabacum*; *Abrus precatorius*; *Lathyrus sativus*; *Nerium odorum*; *Rhododen-*

dron arboreum; Calotropis gigantia, C. procera; Claviceps purpurea; Lantana spp.

(iv) Food poisoning: Ptomaines; mouldy feeds; bacterial food poisoning—salmonellosis, botulism, staphylococcal food poisoning.

(v) Animal venoms: Of snakes, scorpions, insects.

(vi) Radio-active substances.

4. Jurisprudence

General knowledge of the laws relating to veterinary practice.

Professional discipline.

Responsibility of certificate fees.

Examination of living animals and carcasses; collection and despatch of material for analysis. Writing of reports and recording of data.

Common causes of violent death; common criminal injuries and offences against animals in India—mischief, cruelty, bestiality.

Common frauds in the sale of livestock and livestock products in India. Doping.

Duties in common law; care, skill, negligence, contracts, warranty, insurance, liability.

Duties under disputes, acts and regulations dealing with diseases of animals in India; orders regarding notification of diseases. Livestock Importation Act, 1898; Glanders and Farcy Act, 1899 (amended 1920); Dourine Act, 1910 amended 1920; Destructive Insects and Pests Act, 1914 (amended 1930); Poisons Act, 1919; Dangerous Drugs Act, 1930. Methylated Spirit Regulations. Contagious Diseases Act in the State. Prevention of Cruelty to Animals Act, Livestock Improvement Act in the State. Cow Slaughter Act.

Procedure in the courts of law. Common witness; expert witness.

Medical Practical

Clinical diagnosis: General routine of examination; history taking; general method of observation and approach; general examination; physical examination; auscultation percussion, palpation, rectal examination; pulse, respiration, temperature, mucous membranes; special examination (secretions and excretions, blood, collection and despatch of biopsy material; X-ray examination).

Maintenance of case records.

Preventive inoculations,

Care and nursing of sick animals.

Methods of administering therapeutic agents.

General therapeutic measures.

Text Books :

1. 'Wirth's Veterinary Clinical Diagnosis' by Littlejohn.
2. 'Special Pathology and Therapeutics of the Diseases of Domestic Animals' by Hutya, Marek and Manninger.

Reference Books :

1. 'Malkmus Clinical Diagnostics of the Diseases of Domestic Animals' by Mobler and Eichborn.
2. 'Veterinary Diagnosis' by Boddie.
3. 'Index of Treatment' by Hamilton Kirk.
4. 'Practice of Medicine' by Udall.

Surgery :

Lectures — 135 clock hours.

Practical — 150 „ „

1. Surgery

1. General :

Inflammation; wounds, their classification, complication; wound-protecting bandages.

Shock, physiological considerations, classification, and treatment.

Haematoma, abscess, ulcer; necrosis and gangrene; sinus and fistula; burns and scalds; frost bite; tumours, cysts.

General principles of surgical treatment; relationship of bacteriology to surgery; coemotherapy of surgical infections; principles of radium therapy in veterinary practice.

2. Affection of tissues :

Affections of the skin and subcutaneous tissues; of muscles, tendons, ligaments, synovial sheaths and bursae; of blood vessels and lymphatics; of nervous tissues; and of bones and joints.

3. Anaesthesia :

Local, regional and general.

4. Minor surgical procedures :

- (i) Administration of medicines by different routes including passing of stomach tube and probang.

- (ii) Injection of drugs, hypodermic, intramuscular, intravenous, intrathecal, intratracheal, intragierdiac, intramammary, intraperitoneal.
- (iii) Control of hæmorrhage.
- (iv) Hot fomentations, cold douches, application of poultices, liniments and blisters, firing, massago electro-therapy.
- (v) Catheterisation.
- (vi) Vaginal and uterine douching.

5. Operative surgery—general

Approach and restraint of patients; time and place for operations; operation theatres—location, planning and equipment; importance of correct diagnosis; aseptic and antiseptic surgical technique; instruments and dressing materials and their sterilisation; pre-operative care and considerations, preparation of the patient for minor and major operations; operative technique, sutures and ligatures, post-operative care and treatment.

o. Operative surgery—regional :

Affections of the head and neck, external ear, guttural pouches, nasal cavity, jaw, tongue, palate, horns, teeth salivary glands. and eye.

Affections of the neck, back and withers; pharynx. larynx, trachea, oesophagus.

Affections of the thorax and sternum.

Affections of the abdomen, stomach, intestines, rectum, and anus,

Affections of uro-genital organs of male and female.

Affections of the mammary glands.

Affections of fore and hind limbs and feet, including fractures and dislocations.

Affections of the tail.

Gid in sheep and goats.

7. Regional operations :

Eye : Ectropion and entropion, relief of staphyloma, removal of *Filaria oculi*, extirpation of eyeball, excision of membrana nictitans.

Head : Removal of salivary calculi, ligation and repair of Stenson's duct in cattle, amputation of horns in cattle, trephining the sinuses.

Teeth : Rasping, cutting, extraction.

Ear : Aural resections in dogs and cattle.

Neck : Tracheotomy, ringing operation (horse), muting, cervical oesophagotomy.

Withers : Fistulous withers (horse).

Thorax : Trocarization (Paracentesis thoracis),

Abdomen : Puncture of rumen, rumenotomy, laparotomy (dog), hernia, gastrotomy (dog), enterectomy (dog), cryptorchid, nephrectomy (canine), urethrotomy (dog, cattle), cystotomy (dog), paracentesis abdominis.

Fore and hind 'limbs' : Amputation; firing; repair of severed tendons; desmotomy of medial patellar ligament (cattle); amputation of claws and other operations on feet.

Scrotum and penis : Castration by open and closed methods; vasectomy, caponization; amputation of penis.

Tail : Docking.

Important surgical affections of and procedures for camels, pigs, and poultry.

Blood transfusion in animals.

Euthanasia.

2. Radiology and Electro-Therapeutics

(i) Principles of X-radiation, radiology and electro-therapy as applied in veterinary treatment.

(ii) Physical medicine—galvanism, faradism, electro-cautery, low-voltage currents, and peripheral vascular therapy; diathermy (S. W. diathermy).

(iii) Actino-therapy—U. V. Rays; effects, indications, treatment etc.

(iv) Infra-red radiation and application in veterinary practice.

(v) X-ray diagnostics—in different affections of bones, soft tissues, internal organs, foreign bodies etc.

Use of various diagnostic media contrasts.

(vi) Screening, fluoroscopy, spot filming etc.

(vii) Precautions to be taken in handling X-ray apparatus; uses, abuses, sequelae etc.

3. Soundness

1. General Principles of examination.

2. Identification marks.

3. Different unsoundnesses.

4. Certificate writing.

Text Books :

1. 'Dollar's Veterinary Surgery' by J. J. O'Connor.
2. 'Notes on Veterinary Surgery' by Frank.
3. 'Encyclopaedia of Veterinary Medicine, Surgery and Obstetrics' by Wooldridge.
4. 'Examination of Horses for Soundness' by Mc Gregor.
5. 'Veterinary Anaesthesia' by Wright.

Reference Books :

1. 'Surgical Diseases of Dog and Cat' by Hobday.
2. 'Canine Surgery' by Markovitz.
3. 'Surgical Anatomy' by T. Share Jones, Vols. I & II.
4. 'Radiology in Small Animal Practice' by Schnelle.
5. 'Text-Book of X-ray Diagnosis' by Shanks et al.

Obstetrics and Gynaecology.

(PHYSIO-PATHOLOGY OF REPRODUCTION).

Lectures— 60 clock hours.

Practical—120 „ „

Obstetrics :

Introduction. History and development.

Anatomy of pelvis and birth canal in different species (recapitulation).

Physiology of parturition in different species. Onset of parturition. Different stages of parturition. Normal delivery. Expulsion of placenta.

Intra-uterine presentations of the foetus.

Twins and multiple births.

Pathology of parturition. Dystokia, General handling of dystokia cases.

Maternal dystokia—Faulty conformation of pelvis. Primary and secondary inertia. Premature labour pains. Tension of uterus.

Foetal dystokia—Foetal monstrosities. Different types of malpresentation and their correction. Extraction of foetus after correction. Embryotomy. Caesarian section.

Instruments and equipment for obstetrical work.

Sequelae of parturition: Retention of foetal membranes. Prolapse of vagina and uterus. Post-partum haemorrhage. Puerperal infections, different types of metritis.

Care of animals at parturition, and parturition hygiene.

Care of the new born. Diseases of the new-born.

Physiology of Reproduction :

Anatomy of the male and female genital organs (recapitulation).

General aspects concerning physiology of reproduction in the male and the female (recapitulation).

Physiology of reproduction in the male and related internal secretions. Growth and sexual maturity. Secondary sexual characteristics. Sex desire. Sexual behaviour in different species. Act of copulation Spermiogenesis. Sperm physiology. Sperm morphology. Semen and its deposition.

Physiology of reproduction in the female, and related internal secretions. Growth and sexual maturity, Oestrus and oestrous behaviour. Patterns of oestrous cycles in different species. Ovogenesis and follicular development Transport of sperm in the female genital tract. Ovulation. Descent of ovum in the female genital tract. Fertilisation. Nidation. Superfoetation. Gestation. Pregnancy diagnosis. Development of foetus and foetal membranes. Parturition. Twins and multiple births. Development of udder and physiology of lactation (recapitulation).

Pathology of Reproduction :

General aspects concerning pathology of reproduction in the male and the female. Predisposing conditions for infertility. Influence of domestication Different causes of infertility. Hereditary and environmental factors Nutrition and infertility. Pathology of reproduction in the male.

Predisposition for endocrine imbalance. Factors affecting sex desire, serving ability and spermiogenesis. Malformations including under-development of sexual organs. Pathological changes in sexual organs. Pathology of semen.

Pathology of reproduction in the female. Predisposition for endocrine imbalance. Factors affecting oestrus, ovulation, fertilization, nidation. Pathology of ovum. Malformations, including under-development, of sexual organs. Pathological changes in sexual organs causing infertility.

Infertility due to infectious diseases in genital organs. Different types of enzootic infertility, e.g. Vibriosis, Trichomoniasis, epi-vaginitis.

Early embryonic death

Pathology of pregnancy. Prolonged gestation. Various types of abortions, e.g. Brucellosis. Hydramnion. Hydrallantois. Mummification. Maceration. Extra-uterine pregnancy. Pregnancy toxæmia.

General aspects of prevention and treatment for various types of reproductive disorders. Complications as a result of infertility treatment.

Sexual health control.

Sterilization of females.

Udder health control.

Artificial Insemination :

Introduction. History and development. Use in livestock development. Advantages and disadvantages.

Equipment. Cleaning and sterilization. Technical and personal hygiene. Protective clothing.

Collection of semen. Handling, examination and evaluation of semen. Semen dilutors. Dilution, preservation and transport of semen. Technique of artificial insemination. Organisation of artificial insemination work. Recording system. Sexual health control in artificial insemination.

Management and care of artificial insemination bulls.

Practical :

(Training in obstetrics may be imparted at first in phantoms and later in the field as much as possible).

Attending cases of normal parturition.

Handling of instrument and equipment for obstetrical work.

Epidural anaesthesia.

Diagnosis of various types of malpresentations.

Correction of malpresentations and extraction after correction.

Embryology.

Examination of genital organs:—

(a) On material obtained from slaughter-house.

(b) On living animals.

Pregnancy diagnosis during various stages of gestation.

Diagnosis of various types of reproductive disorders.

Treatment for various types of reproductive disorders.

Intra-uterine irrigation and treatment. Enucleation of corpus luteum. Rupture of ovarian cysts.

Hygienic measures in gynaecological work.

Collection and examination of semen.

Dilution, preservation and transport of semen.

Technique of insemination.

Hygienic measures in artificial insemination work.

Methods of recording.

Evaluation of male and female animals for breeding purposes.

Note : To facilitate practical training in the field, an ambulatory clinic in the college is essential.

Text Books and Reference Books :

1. 'Veterinary Obstetrics' by Benesch and Wright.
2. 'Fleming's Veterinary Obstetrics' by J. Craig.
3. 'Veterinary Obstetrics' by Williams.
4. 'The Diseases of the Genital Organs of Domestic Animals' by W. L. Williams.
5. 'Manual of Infertility and Artificial Insemination in Cattle' by Millar and Ras.
6. 'Fertility and Infertility in the Domestic Animals'
by J. A. Laing.
7. 'Artificial Insemination' by J. D. Sampath Kumaran.

Animal Genetics and Breeding :

Lectures — 100 clock hours.

Practicals— 100 „ „

1. Genetics :

History and development of genetics; meaning and scope; factor and character concept; variation.

The physical basis of heredity, cell and cell division; chromosomes, genes and mutations; evidence for the individuality of the chromosomes; chromosome number in different species.

Principles of Mendel; Mendel's materials and methods; dominance, segregation, independent assortment; Mendelian ratios.

Extension and modification of Mendelian hypothesis; incomplete dominance; interaction of genes; duplicate genes; complementary genes; epistasis; lethal genes; multiple alleles; linkage; crossing over; cytological

evidence of crossing over; linear arrangement of genes; mapping of chromosomes; sex-linked, sex-influenced and sex-limited inheritance.

Determination of sex, chromosome theory of sex determination; theory of genic balance; environmental influence on sex determination; free-martins; gynandromorphs; parthenogenesis; intersexes and super-sexes; sex ratio; sex control.

Nature of the gene, mutation, chromosomal aberrations, polyploidy, artificial induction of mutation and polyploidy.

Quantitative inheritance, multiple gene hypothesis, nature of genes affecting quantitative characters genetic and environmental variation; biometrical methods.

Population genetics, continuity of population in time and space, gene frequency, binomial distribution of zygotes, changes in population by selection.

Genetics of farm animals, including poultry; inheritance of different characters; disease and heredity, disease resistance; blood groups.

Extra-nuclear inheritance, maternal influence, milk factors and placental transmission, cytoplasmic transmission in animals.

2. Breeding :

History of animal breeding, different breeds of Indian livestock and their characteristics (recapitulation).

System of breeding—Inbreeding, outbreeding; heterosis, its genetic interpretation; inter-species and intra-species crosses; establishment of new breeds; coefficient of inbreeding, coefficient of relationship.

Selection, considerations in selection; tandem method of selection total score method, selection by independent culling levels; selection indices, selection by pedigree, individuality, and by progeny testing, sire indices.

Accepted breeding policies, programmes and practices in India for cattle, buffaloes, sheep, goats, pigs, poultry etc.

Breeding livestock in unfavourable climates.

Artificial insemination (recapitulation)—Abiological technique for rapid genetic improvement.

Reproductive physiology (recapitulation).

Myths and fallacies in animal breeding, telegony, maternal impression; inheritance of acquired characters.

Practical :

Breeding *Drosophila* stocks. Study of genetic ratios. Linkage and cross-over studies. Gene location with markers. Cytological techniques. Examination of slides illustrating cytological phenomena discussed in lectures.

Exercises on estimating inbreeding and relationship co-efficients, heritability and repeatability. Preparation of sire indices.

Demonstration of lecture materials at breeding farms. Study of breeds at animal shows and fairs. Selection and judging of Indian livestock.

Text-Books :

1. 'Breeding and Improvement of Farm Animals' by Rice and Andrews.
2. 'Principles of Genetics' by Sinnott and Dunn.

Reference Books :

1. 'Genetics' by Altenburg.
2. 'Poultry Breeding' by Jull.

APPENDIX C

*Ref. Fac. Medicine, Pharm. & Vet. Sc. Res. No. 10
of November 20, 1958)*

Minutes of the meeting of the Committee of Courses in Pharmacy, held on the 6th August, 1958, at the University Office, Jaipur.

Present :

1. Dr. S. S. Mathur
2. Dr. P. L. Gupta
3. Shri A. Sen Gupta
4. Dr. R. P. Patel
5. Dr. D. K. Santra

(Convener)

I. Minutes of the meeting of the Committee, held on 25th & 26th October 1957, were confirmed.

II. With reference to the Faculty of Medicine & Pharmaceutics etc. Resolution No. 2 dated the 30th January 1958, the Convener had asked Prof. M. L. Schroff to forward for the consideration of the Committee a statement clarifying certain points regarding the courses of study recommended by the committee.

The committee considered the various points raised in his letter and considered :—

1. his suggestion to redraft the syllabi of Mathematics papers in the light of the scope indicated in a book 'Mathematics for the use in Pharmacy, Biology and Chemistry' by Saundess & Fleming—Pharmaceutical Press, London. The Committee does not consider that the book by itself covers adequately the mathematical requirement, especially, for the paper on Pharmaceutical Engineering Sciences and therefore does not consider that the syllabi already recommended need be redrafted. However, the book suggested by Prof. Schroff is recommended for use as one of the text books for the revised B. Pharm. course.
2. his suggestion of revising the I. Pharm. syllabus :
The Committee observes that the question of revision does not arise in view of its Resolution No. 2 dated 26-10-57 wherein at the suggestion of Prof. Schroff himself, the revision proposed by a Sub-Committee was shelved as recommenda-

tions of the Pharmacy Council of India in this regard are still awaited.

3. his suggestion to curtail the A. I. C. T. E. syllabus in order to fit in the course to a 30 week session, is acceptable to the Committee

Some curtailment of the A. I. C. T. E. course has already been effected in the Committee's previous recommendations dt. 25/26th October 1958 by :—

- i) Shifting the 'Mathematics 2nd Paper' to the 2nd year.
 - ii) incorporating 'Mechanics' into the above paper.
 - iii) bringing forward, 'General Pharmacy' a simpler paper to the 1st year course.
4. his suggestion to exempt I. Pharm. students joining B. Pharm. course from subjects which they have already studied and on the same standard. (Forensic Pharmacy, Dispensing & Pharmacognosy).

The Committee is of the opinion that the standard of the courses in Forensic Pharmacy and Dispensing Pharmacy may be considered to be the same for I. Pharm. & B. Pharm. but the Committee is of the opinion that the courses in Pharmacognosy prescribed for I. Pharm. II and in the revised B. Pharm. II classes are not of same standard. In the light of the above certain necessary changes in the previous recommendations may be effected. The Convenor was requested to draft the necessary changes.

(as given *vide Appendix*).

The question of providing for any other special subject for I. Pharm. students therefore does not arise. The special subjects suggested by Prof. Schroff i. e. Advanced Pharmaceutical Analysis, Biochemical Engineering and Business Method have already been incorporated in the revised syllabi in one form or the other.

For example, in the already recommended revised syllabus there are two papers of Commerce of which Business Methods form a part. All aspects of Pharmaceutical Engineering including technology of biochemical products related to Pharmacy have already been included in the two papers of Pharmaceutical Engineering & Industrial Chemistry. The analytical Chemistry syllabus had been distributed in graded papers throughout the three years course, beginning from elementary to advanced stages.

5. his suggestion of redrafting the syllabi of Pharmaceutical Chemistry & Pharmaceutical Engineering Sciences in the light of London University Syllabus. The Committee accepts his suggestion and the draft prepared by the Convener with the above in view was accepted by the Committee.
6. Accepted his suggestion to include text book of Organic Chemistry by J. B. Conant, under text books for B. Pharm. Part I Organic Chemistry.
7. The Convener was requested to make the necessary changes in the Ordinance, syllabi, etc. in the light of the above proceedings.

III. Considered the application of Shri Mohan Lal Bhandari for inclusion of his name in the panel of examiners for B. Pharm. I Chemistry. The Committee is of the opinion that his qualification in pure Organic Chemistry, in the absence of specialization in Pharmaceutical Chemistry does not make him eligible for examinership in Pharmaceutical Chemistry. Therefore resolved that the panel prepared by the Convener be accepted.

IV. Considered the examiners' reports and recommended that the attention of the teaching authorities be drawn to the various criticisms made by the examiners.

V. Resolved that a copy of the above minutes including resolutions and drafts of revised syllabi be sent to Prof. Schroff for his information.

D. K. Santra
Convener.

Appendix

(Ref. Committee of courses in Pharmacy Res. No. II (4)
of August 6, 1958)

Amendments to amendments recommended by the Committee of Courses at a meeting held on 6th August 1958, to report of revision Committee.

Amendment of Ordinances : (with reference to Appendix B to minutes of Committee of 25/26 October 1957).

O. 293:

(The list of subjects to be substituted by the following).

*Optional : 1. Biology or Mathematics

Compulsory : 2. Physics

3. Pharmaceutical Chemistry—(Physical)

4. Pharmaceutical Chemistry—(Inorganic)

5. Pharmaceutical Chemistry—(Organic)

6. Pharmaceutics I (General Pharmacy)

7. Anatomy, Physiology & Hygiene

8. English

*Candidates with Mathematics in I. Sc. or equivalent examination (as under Ordinance 291 A) shall appear in Biology and those with Biology shall appear in Mathematics. (All previous recommendations reference to O. 293 herewith cancelled).

O. 294.

(The list of subjects to be substituted by the following)

1. Mathematics (including Engineering Mechanics)

2. Pharmaceutical Chemistry (Analytical)

3. Pharmaceutical Chemistry (Advanced Organic)

4. Pharmaceutical Microbiology

5. Pharmacognosy

6. Pharmaceutical Technology I (Manufacturing Pharmacy)

7. Principles of Economics & Sales Promotion

*8. Forensic Pharmacy or Humanities

*9. Pharmaceutics II—Dispensing or History of Pharmacy.

*Inter Pharm. students shall be exempted from appearing in Forensic Pharmacy & Dispensing Pharmacy and shall appear instead in

History of Pharmacy & Humanities. Marks obtained by Inter. Science students in Forensic Pharmacy and Dispensing Pharmacy and by Inter. Pharm. students in History of Pharmacy & Humanities shall not be considered towards the aggregate marks obtained by them in the rest of the papers.

(All previous recommendations pertaining to O. 294 herewith cancelled).

*With reference to Appendix 'A' of minutes of Committee of
25/26 October, 1957.*

Under the schemes of examination for B Pharm. Part I (R. 31) delete all entries from item "8 to minimum pass marks". Insert the following :—

"8 English 30 20 20"

Total for Biology students :

450 300 335 420 280 315

Total for Mathematics students :

450 300 335 360 240 270

Grand Total : Biology :	1450	725	} Minimum Aggregate Pass Marks.
Maths. :	1350	675	

N. B. : Paper No. 8 shall be of two hours duration. The minimum pass marks in this paper shall be 40%.

Under Schemes of examination for B. Pharm. II (R. 32) substitute Table by the following :

1. Mathematics (including Engineering Mechanics)	60	40	45	—	—	—
2. Pharmaceutical Chemistry (Analytical)	60	40	45	60	40	45
3. Pharmaceutical Chemistry (Advanced Organic)	60	40	45	60	40	45
4. Pharmaceutical Microbiology	60	40	45	60	40	45
5. Pharmacognosy	60	40	45	60	40	45
6. Pharmaceutical Technology (Manufacturing Pharmacy)	60	40	45	60	40	45
7. Principles of Economics & Sales promotion	60	40	45	—	—	—

8. Pharmaceutics II (Dispensing)	60	40	45	60	40	45
8A. History of Pharmacy	60	40	45	--	--	--
9. Forensic Pharmacy	60	40	45	--	--	--
9A. Humanities.	30	20	20	--	--	--
Total (Papers I to 7)	420	280	315	300	200	225
Grand Total (Papers I to 7)	1200		600	(Minimum Aggregate Pass marks).		

N. B.: Paper No. 9A shall be of two hours duration. The minimum pass marks in this paper shall be 40%.

(Item 8 of Appendix 'B' be deleted).

Amendments of Syllabus :

In supersession of all previous recommendations, the syllabi (theory) of the following paper only be substituted as follows :

B. Pharm. Part I

Pharmaceutical Chemistry (Physical)—by Schedule A.

Pharmaceutical Chemistry (Inorganic)—by Schedule B.

Pharmaceutical Chemistry (Organic)—by Schedule C.

English —by Schedule D.

B. Pharm. Part II.

Pharmaceutical Chemistry (Analytical)—by Schedule E.

Pharmaceutical Chemistry (Advanced Organic)—by Schedule F.

Forensic Pharmacy —by Schedule G.

Humanities —by Schedule H.

History of pharmacy —by Schedule J.

B. Pharm. Part III.

Pharmaceutical Chemistry Chemistry of
Natural & Synthetic Drugs &

Antibiotics —by Schedule K.

Pharmaceutical Engineering Science —by Schedule L.

The following text books shall be included in the list of the text books prescribed :

For B. Pharm. Part I.

1. Under Mathematic "Mathematics for the use in Pharmacy, Biology & Chemistry—by Saunders & Flemings. Pharmaceutical Press, London."

2. Under Pharmaceutical Chemistry-(Organic)

"Text book of Organic Chemistry by J. B. Conant".

Resolved to recommend that: the above amendments together with all relevant amendments previously made regarding Ordinances, Regulations and Syllabi etc. shall come into effect immediately, that is, I.Pharm. Part I and B. Pharm. Parts I, II & III examinations of 1960 and I.Pharm. Part II examination of 1961.

D. K. Santra

Convener.

Schedule A

B. Pharm. I.

Pharmaceutical Chemistry (Physical Chemistry).

The principles of Physical Chemistry with special reference to their pharmaceutical and analytical applications comprising the following :

1. The properties of Gases.
2. Liquefaction and the properties of Liquids.
3. Solutions of gases, liquids and solids in liquids; Raoult's law. Distillation of liquid systems; distribution between immiscible solvents; counter current extraction, partition chromatography, paper partition Chromatography.
4. Elementary treatment of the Phase Rule & its applications to system of one component; freezing & melting point curves.
5. Physical measurements & molecular structure. Molecular Wt. determination; additive and constitutive properties; dipole moments; Light absorption; Polarimetry.
6. Properties of Dilute Solutions.
7. Laws of Thermo-chemistry; standard heat of formation; relationship between chemical affinity and energy changes in reaction free-Energy.
8. Elementary treatment of chemical thermodynamics including the 1st & 2nd laws of thermodynamics.
9. Laws of mass action and variation of equilibrium constant with temperature.
10. Electrolytic Equilibria. Titration of Weak electrolytes.
11. Hydrolysis of Salts; pH & buffer solution.
12. Elementary treatment of the Kinetics of homogeneous chemical reaction. Homogeneous Catalysis; Mechanism of Catalysis.
13. Conductivity of Electrolytes and transport numbers. Electrolysis & Polarisation. E. M. of cells; Single Electrode Potentials; Liquid junction potentials; relation between Electrical and Chemical Energy.
pH measurement; Oxidation-reduction systems, potentiometric titrations.

14. Adsorption at interfaces; Adsorption & Surface concentration; preparation; purification & general properties of colloid; Colloidal Electrolytes; membranes & Emulsion; Adsorption Chromatography.

Schedule B.

B. Pharm. I :

Pharmaceutical Chemistry (Inorganic Chemistry).

Section A : (40-45 lectures).

1. The preparation and properties of the elements and compounds of pharmaceutical and analytical importance or of use in organic syntheses & degradations.
2. The occurrence of impurities in medicinal chemicals and substances used in pharmacy. The principles underlying qualitative and quantitative analysis. The principles underlying tests for purity.

Section B : (15-20 lectures).

1. Elementary treatment of emission and X-ray Spectra; outlines of modern theories of atomic structure; Pauli's exclusion principle; periodic table and the electronic structure of the elements; Typical and transition Elements.
2. Radio activity :—natural and induced; mass-spectrograph & isotopes. Uses of isotopes.
3. The general character of the elements & their compounds as indicated by their position in the periodic table and Electronic structure of their atoms as exemplified by the behaviour of their oxides, hydrides and chlorides.
4. Theory of valency—Electrovalency, Covalency; Co-ordination compounds & complex salts.

N. B. : 4 questions from section A and 2 question from Section B must be answered.

Schedule C.

B. Pharm. I :

Pharmaceutical Chemistry (Organic).

1. A General consideration of the mechanism of simple organic reactions.
2. A systematic study of organic Chemistry including methods of formation and preparation and the general chemical

properties of aliphatic, aromatic and alicyclic compounds containing the chief functional groups illustrated by reference to compounds used in pharmacy.

3. A consideration of conjugated systems, polymerisation, and polycondensation, Strainless ring system,
4. The study of synthetic methods of importance in organic chemistry.

Schedule D.

B. Pharm I.

English :

Minimum Pass Marks 40%.

Rapid Reading : 1. Joan of Arc—Bernard Shaw.

2. Old man & the sea—Hemingway.

Composition ; Including Essay & precis writing,

Note : The paper shall be of two hours duration. Six questions shall be set, out of which four shall be attempted by candidates.

Schedule E.

B. Pharm. II

Pharmaceutical Chemistry (Analytical Chemistry)

1. Discussion of theories underlying the reactions of qualitative and quantitative analysis with particular reference to the law of mass action, Solubility product, pH, Hydrolysis, Buffer solution, complex ions.
2. Theory of indicators.
3. Theory of oxidation, reduction reaction; Electrode potentials.
4. Electrolytic method of analysis.
5. Theory of analytical techniques involving the use of physical instruments including pH measurement, Polarography, absorptiometry & Spectrophotometry, fluorimetry & colorimetry. Physical principles upon which the instruments employed in these techniques are based in so far as such principles provide a realisation of the scopes and limitations of the instruments.
6. Organic reagents and their applications in analysis.

Schedule F.**B. Pharm II****Pharmaceutical Chemistry (Advance Organic)**

The Chemistry of the following groups of compounds illustrated by examples of importance in pharmacy :

1. Homocyclic compounds illustrated by naphthalene, anthracene, phenanthrene & their derivatives.
2. Carbohydrates & simple glycosides.
3. Amino acids and proteins.
4. Oils, Fats & Waxes.
5. Purines—Uric acids, theobromine, theophylline, caffeine, adenine.
6. Terpenes and more important constituents of essential oils & related products.
7. Heterocyclic compounds :—Pyrrole, Indole, pyridine, quinoline, Isoquinoline, Acridine, pyrimidine, pyrazole, thiazole & their reduction products.
8. Sterols, Bile acids & cardiac glycosides
9. Elementary treatment of chlorophyll, haematin, & nucleic acids.
10. Methods of extraction, preparation & purification and the general methods used for the elucidation of the structure & chemical properties of alkaloids illustrated by examples of pharmaceutical importance.
11. Study of Stereo-isomerism, tautomerism & resonance.

Schedule G.**B. Pharm. Part II****Forensic Pharmacy**

Study of Dangerous drugs Act of 1930, Opium Act; Poisons Act; Drugs Act 1940; Drugs Rules 1945; Pharmacy Act 1948; The Excise Act and Rules; The Drugs and Magic Remedies Act, and such other State Acts as materially affect the pharmaceutical profession. Code of ethics for a Professional Pharmacist, including his duties, responsibilities and privileges.

Schedule H.**B. Pharm. II****Humanities**

General condensed information on the following topics :

1. Religious Reformation in Europe.
2. Religious Reformation in India.
3. Influence of French Revolution in International Politics.
4. Growth of Imperialism & Colonialism.
5. Labour movements & reforms.
6. First World War.
7. Dictatorship.
8. Democracy.
9. Socialism & Karl Marx.
10. Second World War.
11. U. N. O. & Freedom Charter.
12. Freedom Movement in India.
13. Constitution of India.
14. Civics & Citizenship.

- N. B. :*
1. Information to be collected by the teacher from standard text books on social studies and drugs and pharmaceutical legislation.
 2. The papers shall be of two hours duration. Six questions shall be set out of which four shall be attempted by candidates.
 3. Minimum Pass Marks—40%.

Schedule J.**B. Pharm. II.****History of Pharmacy**

Chronological Development of Pharmacy as characterised by contributions made by the following :

A. Mediaeval Eve.

(1) *India :*

- i) Charaka
- ii) Sushruta
- iii) Vagabhatta

iv) Nagarjuna

v) Bower Manuscripts.

(2) *Arabian :*

i) Al Razi (Rhazes)

ii) Ibu Sina (Avicenna)

iii) Abu-I-Qasim al-Zahrawi (Alucasis)

(3) *Egyptian :*

Papyrus (Medical Papyri)

(4) *Chinese :*

Chang-chung-ching

(5) *Greek & Other Europeans :*

Hippocrates, Dioscorides, Theophrastus, Pliny; Galen (Roman) Paracelsus.

B. *Modern Era :*

Pasteur, Koch, P. C. Ray, Emil Fischer, Ehlisch, Domagk, Fleming, Butenandt, Robinson and Subbarow.

Books recommended :

1. History of Pharmacy—Krener & Urdang.
2. History of Indian Pharmacy—Srivastava.
3. History of chemistry—Moore.

Schedule K,

B. Pharm. III

Pharmaceutical Chemistry (Natural & Synthetic Drugs & Antibiotics).

- A. Chemistry of the more important natural products of pharmaceutical importance :
 1. Vitamins
 2. Hormones
 3. Antibiotics
 4. Alkaloids
- B. Survey of the chemistry of the main groups of compounds which exhibit physiological activity :

Anaesthetics :—General & Local, Hypnotics & Sedatives; Antipyretics and Analgesics; Diuretic; Cardio-vascular drugs; Analeptic; Anticoagulants, Expectorants; Sympathomimetic-

amines; Sympatholytic agents, parasympathetic amines, Antispasmodics; Histamine and Antihistamines : Drugs for treatment of cancer.

- C. Survey of the chemistry of the main groups of compounds which combat invading organism :

Antimalarials, Antitubercular agents; antileprotic agents; Amebicides; Antifilarial drugs; Sulfa drugs, Organo-metallic drugs, Anthelmintics; General antiseptics and disinfectants.

Schedule L.

B. Pharm. Part III.

(Pharmaceutical Technology II Pharmaceutical Engineering)

A. Pharmaceutical Engineering Processes :

1. Conveyance and Storage of Materials.

- (a) The law governing the flow of gases and liquids and methods of measurement.
- (b) Plant and equipment for conveyance and storage of semifluids, liquids and gases.

II. Heat Transmission :

Mechanism of heat transfer by conduction, radiation, and convection. Condensation of vapours : Effect of non-condensable gases. Radiation from surfaces. Effect of nature of materials and boundary films of liquids and gases on heat transmission and their relation to fluid friction. Heat conservation and insulation. The problem of heat transfer in the process of freeze drying. Methods and applications of inductive heating.

III. Treatment of Materials.

A good knowledge of the following :—

- (a) The principles governing the operation of plants for processes employed in pharmaceutical industry with special reference to the following :
 1. Size reduction.
 2. Mixing.
 3. Compression.
 4. Separation without change of phase or physical state.
 - (a) Hydraulic, separation.

(b) Air separation.

(c) Filtration.

(d) Centrifuging.

5. Separation with change phase or physical state.

(a) Leaching and extraction.

(b) Evaporation.

(c) Distillation and Condensation.

(d) Drying.

(e) Crystallization.

(f) Absorption and Adsorption.

(b) A knowledge of plant for some of the typical operations in the physical and reaction treatment of materials selected from 1 to 5 above.

(c) Paking and conveyance of manufactured materials.

(d) The preparation of quantitative Flow Sheets of materials, energy and time.

B. Pharmaceutical Plant Construction.

A general knowledge of the following :

i. The nature and properties of the important materials employed in the construction and erection of plant.

ii. The resistance of materials of construction to corrosion and to chemical and physical change.

C. Safety Methods in Pharmaceutical Laboratories and Works :
An appreciation of mechanical, chemical and fire hazards.
The problems of explosive hazards including inflammable gases and dusts.

APPENDIX D

*Ref. Fac. of Medicine, Pharm. & Vet. Sc. Res. No. 15
of November 20, 1958)*

Inspection report of Hospital at Ajmer in connection with its recognition for training of fresh Medical graduates as interneers.

I visited Ajmer and inspected the Victoria Hospital on 1st June 1958 in connection with the recognition of this institution for the training of fresh medical graduates (interneers). Dr. S. P. Wanchoo, who is the Principal Medical & Health Officer of this place, very kindly showed me the insitution and its various departments.

• There are two Government hospitals at this place; one is the main Victoria hospital with 320 beds and the other with 80 beds in the city. Thus there are approximately 400 beds. Departmentwise distribution of these beds is shown under each department.

There is a good sized Outpatient Department and the average attendance in the Outpatient is about 800 patients a day. These institutions have all the necessary clinical departments required for the training of the interneers in this place together with the satisfactory arrangements for their training in Public Health.

The Department of Surgery consists of two units, each one of which is headed by a well qualified surgeon. The number of beds and equipment and other facilities as were shown to me, details of which are attached in the report, have convinced me that this department has adequate facilities for the training of interneers.

The Medical Unit consists of only one unit. The Head of the unit possesses the postgraduate qualification but this qualification is not recognised by the Medical Council of India. However he has got two assistants who possess proper post-graduate qualifications of M. D. (Medicine) and hence this unit also possesses adequate facilities for the training of interneers.

The Department of Gynaecology is headed by a qualified Gynaecologist and there appears to be adequate arrangements in this department also for training of interneers.

Besides this, for *training in Public Health Programme*, good arrangements could be made in this place as there are suitable Public Health persons where the interneers can get training in Public Health matters. In addition people can be trained here in antimalarial unit, family planning centres and B. C. G. centre etc. during this period and hence in my

opinion the training for public health can also be carried out for internees here.

Besides these main departments, *other departments of Pathology, Radiology etc.* have good equipment and adequate facilities for investigations.

There is a *small Library* and recently some new books have been purchased for this library also. In my opinion the library facilities in this place are not adequate and authorities should be approached to provide more facilities for purchase of more journals and books.

The report of the Principal Medical & Health Officer, Ajmer which furnishes all the details regarding staff, equipment and facilities available in each unit, is attached for information (*vide Appendix*).

Taking into consideration all the facilities that are available in this institution, I am of the opinion that adequate facilities for training of internees exists in this place. Upto 9 internees at a time can be trained here for a period of six months according to the internship training programme. The P.M. & H.O. will however have to make suitable arrangement for accommodation of these internees in the premises and to provide them free water and electricity for which he should obtain Government sanction. He should also approach the Government to increase library facilities in this institution so that the fresh graduates as well as the old graduates may keep abreast all the latest advances in medical science. I recommend that this institution may be recognised for the training of internees.

R. M. Kasliwal
Inspector.

Appendix

Copy of D. O. No. 9543/VIII H-202 dated Ajmer the 19th June, 1958 from Dr. S. P. Wanchoo, Principal Medical & Health Officer, Ajmer to Dr. R. M. Kasliwal, Principal, S. M. S. Medical College, Jaipur.

Sub :—Recognition of Victoria Hospital, Ajmer for the Training of Fresh Medical Graduates as Internees,

Kindly refer to letter No. 11004 dated the 5th February, 1958 from the Registrar, University of Rajasthan, Jaipur addressed to you and copy endorsed to this office, as well as your recent visit of the Victoria Hospital, Ajmer

2. The information required by you is as follows :—
Hospital Administration :

There are two Govt. Hospitals one with 320 beds and the other with 80 beds in Ajmer City. Apart from this, 250 bedded Madar Union Sanatorium facilities can be available.

There is a Principal Medical and Health Officer with two specialists assisting him in administrative matters with Superintendent, Accountant and so many clerks.

1. Hospital Budget : 7, 24, 573/—(Regular 605, 573/—
Plan Sch. 1, 19,000)

2. Average Inpatients : 279

3. Average Out-patients 774

Details of Departments Functioning in Ajmer Which Will be
utilised for the training of internees

1) There are two independent :

Surgical units/and other Ancilliary units.

One Medical and other Ancilliary Units.

1. Surgical Ancilliary Unit :

I. Surgical Units :

(a) *Staff*: i) Dr. S. P. Wanchoo, M B B.S., L.R.C.P.,
F.R.C.S., L.M. Senior Surgeon & Principal
Medical & Health Officer.

ii) Dr. K. D. Shastri, B.Sc., M. B. B. S.,
F. R. C. S., Junior Surgeon.

- iii) Dr. Jai Narain, M.B.B.S., C.A.S. Class I.
- iv) Dr. H. S. Broca, M.B.B.S., C.A.S. Class I.
- v) Dr. Mrs. K. Broca, M.B.B.S., C.A.S. Class I.
- vi) Dr. A. G. Nigam, M.B.B.S., C.A.S. Class I.
- vii) Dr. S. D. Sharma, M.B.B.S., C.A.S. Class II.
- viii) Dr. N. M. Nelson, M.B.B.S., C.A.S. Class II.

(o) *No. of Beds :*

Total number of beds in both units is 154 including 20 beds for paediatric Surgery and 40 beds for Orthopaedics.

(c) *Facilities available :*

There are three Surgical Theatre Units well equipped with the modern institutions and appliances (Appendix I). One of the Theatres, specially equipped with X-rays and Dark Room facilities for Orthopaedia and Genito Urinary Surgery. There is a separate Post-Operative Ward for *recently operative measure cases with specialised Nursing Staff.*

II. Anaesthesia Unit :

- (a) *Staff :*
- i) Dr. J. Y. Massey, C.A.S. Class I.
 - ii) Dr. R. T. Gajwani, M.B.B.S., S.D.A. G.A.S. Class I.

(b) *Facilities available :*

Two latest modern Boylès, Anaesthetic apparatus with all necessary accessories.

III. E. N. T. Unit :

- (a) *Staff :*
- i) Dr. A. L. Wahi, M.B.B.S., D.L.O., C.A.S. Class I.
 - ii) Dr. B. Manghani, M.B.B.S., C.A.S. Class II.

(b) *No. of beds :* There are 8 beds.

(c) *Facilities available :*

Theatre facilities are available.

IV. Eye Unit :

- (a) *Staff :*
- i) Dr. Arjun Sahai Varma, D.O.M.S. C.A.S. Class I.
 - ii) Dr. Desai, M.B.B.S., F.R.C.S., Fcnv. Ophthalmologist.

(b) *No. of Beds*: There are 24 beds.

(c) *Facilities available* :

There is an Eye Theatre which is fully equipped.

(II). Medical Ancillary Unit.

I. Medical Unit :

(a) *Staff* : i) Dr. N. C. Mallick, M.B.B.S., M.B. (cal.),
F.R.F.P.S. (Glas) Physician.

ii) Dr. M. S. Mathur M.D. (Medicine), C.A.S.
Class I.

iii) Dr. R. N. Tondon, M.D. (Medicine), C.A.S.
Class II,

iv) Dr. V. D. Sharma, M.B.B.S., D.C.H. (Agra)
C.A.S. Class II.

v) Dr. Saligram, C.A.S. Class II.

(b) *No. of Beds* :

There are 116 beds including 20 beds for Paediatrics
and 16 beds for infectious diseases.

(c) *Facilities available* :

Electrocardiogram, Drinkers Apparatus, Clinical Side
Room and Laboratory facilities are available.

(2) V. D. & Skin Unit :

(a) *Staff*: i) Dr. G. L. Maheshwari, M.B.B.S., C.A.S.
Class II.

(3) Obstetrics & Gynaecological Unit :

(a) *Staff*: i) Dr. A.J. Abraham, M.B.B.S. D.G.O.,
Gynaecologist.

ii) Dr. T. K. Notani, D.G.O. Obstetric Gynaecology, C.A.S. Class I.

iii) Dr. Mrs. C. P. Queterio, M. B. B. S. C. A. S.
Class I.

(iv) Dr. Miss Kumud Kumari, M. B. B. S. C.A.S.
Class I.

(v) Dr. G.P. Sharma, M.B.B.S., C.A.S. Class II.

(vi) Dr. Mrs. Trikku, M. B. B. S., C.A.S. Class II.

(b) *No. of beds* : There are 80 beds.

(c) *Facilities available* : Operation Theatre and Labour
Room facilities are available.

(4) Pathology Unit :

- (a) *Staff*: (i) Dr. S. S. Nanda, M.B.B.S., Junior Specialist.
 (ii) Dr. Bhagwan Swaroop, D.T.M. D.C.P.
 C.A.S. Class I.

(b) *Facilities Available* :

There is a well equipped Laboratory with separate Blood Bank Unit. The equipment are modern (App. II).

5. Radiology Unit :

- (a) *Staff*: (i) Dr. S. Mathur, DMR, C. A. S. Class I.

- (b) *Facilities Available* : Equipped with 5 Diagnostic including one 500 M. A. with. Tomographic attachment, deep and Superficial X-ray Therapy with modern Physiotherapy department with rehabilitation. Ten equipments are under a trained physiotherapist, for details see (App III).

III. Public Health Including T. B. & Family Planning :

- a) *Staff*: i) Dr. Jai Singh Kapoor.
 ii) Dr. M. K. Dey, M.B.B.S. D.P.H., Medical Officer of Health, Municipal Committee, Ajmer. His services will be available for teaching purposes.
 iii) Dr. Totuka, Supervising Medical Officer, Mass B.C.G. Vaccination Campaign, Ajmer.
 iv) Dr. Agarwal, Asstt. Supervising Medical Officer.
 v) Dr. Sherwood Hall, M.D., Superintendent, Madar, Union Sanatorium, Madar.
 vi) Dr. J. T. Wells, M.B.B.S., C.C.P., Surgeon, Madar Union Sanatorium, Madar.
 vii) Dr. Mrs. Hall, M. D. Hony I/C. Family Planning Centre.
 viii) Dr. Sharma, T. D. D.
 ix) Dr. Gandhi, M.B.B.S. D.C.H., Anaesthetist.

Item Nos. V, VI, VII, VIII & IX are not Govt. servants but their services will be available for teaching purposes.

(b) *No. of beds* :

There is a 250 bedded Chest Hospital with fully equipped

Thoracic Surgical Unit at Madar which will be available for teaching purposes.

For practical training the following are available :

1. Municipal Health Organisation.
2. Anti Malaria Unit.
3. Health Museum.
4. 3 Maternity & Child Welfare centres with Domicillary and Midwifery services.
5. Family Planning Centres.
6. Community Project Blocks with Primary Health Centres.
7. Mechanise Transport facilities for taking internees to various places.

IV. Outpatient Department :

The following independent units are functioning :

1. Surgical
2. Medical
3. Gynaecology
4. Obstetrics
5. Ophthalmology
6. E. N. T.
7. Eye
8. T. B.
9. Dental Department : Staff : Dr. H. M. Rishi, B. D. S.,
C. A. S. Class I.

V. Library Facilities :

There is a separate Library with so many books, Recently, about 200 books costing about Rs. 5, 000/- have been added and more have been ordered.

VI. Lecture Facilities :

There is a modern equipped Lecture Hall with 200 capacity with projector, sound equipment, Movie and Sound films. Accommodation can be arranged for 6 internees with the Hospital Premises. More can be accommodated in adjoining building with mess facilities.

VII. Extension of Five Year Plan :

In addition to above there are numerous schemes for the extension of Hospital in Ajmer City costing about 15 lacs.

Out of this the following wards and department costing about 5½ lakhs are under construction and would be ready within the next few months consisting the following accommodation :

1. Paediatrics : 24 beds
2. Medical Extension 30 beds
3. Surgical Extension 24 beds
4. Casualty ward with additional Casualty Operation theatre 8 beds.

The following additional buildings costing about 7½ lacs sanctioned are to be completed during this Five Year Plan.

Plan Provision.

1. Isolation Block with 20 beds V. H. Ajmer.	2,06,500
2. Provision of a lift in V. H. Ajmer.	40,000
3. Upgrading of T. B. Clinic, V. H. Ajmer.	22,000
4. Upgrading of K. G. V. M. M. Home, Ajmer.	5,21,000
5. Domicillary Midwifery accommodation.	84,000
6. Public Health Laboratory to be attached to V. H. Ajmer.	46,000
	<hr/> 9,19,600 <hr/>

This will give us another 120 beds.

Thus after successful implementation of the plan we will have 526 beds.

S. P. Wauchco.

Heavy Equipment in Operation Theatre of Victoria Hospital, Ajmer.

1. High Pressure Steam Steriliser (K. Oil)	2
9. High Pressure Steam Steriliser Electric.	3
3. Water Still for distilling water	4
4. Castle Light ceiling	2
5. Operation theatre light ceiling (Melgham's)	1
6. Casttel Mobile Lamp.	7
7. 'Boyl's Anaesthetic Machine "H" Type	2
8. Super Heideburger Operation Table.	3
9. Excessive for Super Heedburgen. Operation Table viz. orthopedic over hall, Pelvise, Neuro etc.	
10. Electric Suction apparatus.	6
11. Stead Man's Pump	2
12. Bowl Sterilizer.	2
13. Instrument Steriliser	2
14. Hot and cold water steriliser	1
15. Plaster Cutting Saw	1
16. Stryker Bone Saw Electric	1
17. Cystoscope	3
18. Resec toscope Enesthy's	1
19. Demartyl's Skull saw	1
20. DrillElec tr ic	1
21. Cystoscopy Baby.	1
22. Electric Caytery Surgical	1

Appendix II

Equipment Pathology Department, Victoria Hospital, Ajmer.

1. Sortorious, Analytical Balance model S. T. 3 Capacity 200 mgms and sams 1/10 mgm. complete in case.	One
2. Cenkirifuge Electric Machine with 6 tubes for use on Ac 220 Volts.	One
3. Electric Centrifuge Machine with Conical Head for 8 tubes Model Junior complete with tubes working on 220 volts ac/dc	One
4. Incubator	Two
5. Microtome	One
6. Microtome Racking Combridge with knife	One
7. B & L Clinical Microtome	One
8. Ratory Microtome, Speneer. Model 820 C 3 Holders bege Oil con and Instructor Book.	One
9. Paraffin Embedding Bâ'h complete to operate on 23 Volts Ac	One
10. Crosby Sheluadar, Refrigerator. (Closed Unit Model) 5075	One
11. Refrigerator Electabux	One
12. Microscope, Watson	One
13. Microscope (Zies)	One
14. Microscope Dissecting Binocular	Two
15. Microscope Smip & Sore.	One
16. Microscope without case. Without space lens car Eye pieces.	One
17. Microscope menocular B & C	One
18. Microscope Binacular Specimen with only three objections.	One
19. Zies Wingle, Photomicrographic Camera	One
20. Roll film adopter for above	One
21. Sets Flame Photometer original English for accurate estimator of alkalineatels in solution with all accroes.	One

22. Potassium Filter for above.	One
23. Esler Heavy duty Khan Shaker Machine 220 Volts Ac.	One
24. Water Bath Copper Cylinder with canslate level arrangement stand's diameter	One
25. Grogenl Gertar Centrifuge K. 46 & 4 Tet. Pippt, 1 cc. 10 cc. 11 cc. male and female combined.	One
26. Memmirut, Universal Apparatus. Thermostatically controlled OWM and incubator combined modle No. TV 10 complete with accessories working on 220. Ac/Dc.	One
27. Colarimeter (Dubosque).	One
28. Photo Electric Colarimeter Sets English with 11 litters complete	One
29. Meat mincing machine English.	One
30. Clinical Shaker Electric	One
31. Aerdeen Petrol Gas plant complete	One
32. Direct Vesian Palet Spectras cape	One
33. B. T. L. Steam Sterilizer Electric complete	One
34. Referequratur.	One
35. High Pressure Steam Stem Sterilizer	Two

Appendix III

Equipment X—Ray Department Victoria Hospital, Ajmer :

1. Seemens Hebro Plane Super.	500 M. A.	One
2. Diagnostic (Victor)	100 M. A.	One
3. Phillips Worl Mobile	60 M. A.	One
4. Model F. 2 Portable Diagnostic Machine (Victor)	10 M. A.	One
5. Phillips X—Ray Diagnostic Machine. 12 M. A. (Lying in operation Theatre) for Mobile van X—Ray.		One
6. Maximor. 200 (Deep X—ray) (Victor)		One
7. K. X. 10 Superficial X—Ray (Victor)		One
8. Diathermy Machine (Slurt Vane Therapy) (Victor)	/	One
9. Phillintet (Galvaine Sirohidel & Faradic Current)		One
10. Infa Med Camp.		Two
11. Ultra Violet BISOL (Phillips)		One
12. Dietzury. 500 OSCILLOFLUX (Phillips)		One

INDEX

TO

MINUTES OF THE MEETINGS OF THE UNIVERSITY OF RAJASTHAN

VOLUME XXIII

(July to December, 1958)

ABBREVIATIONS USED:—A. C. for Academic Council; B. I. for Board of Inspection; R. B. for Research Board; P. B. for Publication Board; S. B. for Sports Board; F. C. for Finance Committee; Fac. for Faculty; V.C. for Vice-Chancellor; B. O. S. for Board of Studies; Com. for Committee; C. O. C. for Committee of Courses; p. for page; pp. for pages; w. e. f. with effect from; w. r. t. with regard to; exam. for examination; exams. for examinations.

Admissions:—Rules governing admission of students to the B. V. Sc. & A. H. examinations referred to Fac. of Medicine (pp. 14-16).

V.C. 's orders in allowing the admission of Ram Autar Agarwal, to III yr. B. Com. class of S. D. Govt. College, Beawar, for he was admitted against rules by the Principal through oversight, confirmed by Syndicate (p. 29).

V. C. 's orders in allowing provisional admission to the next higher class to candidates who have been declared eligible for appearing at the Supplementary exam. of the Rajasthan Board, confirmed by Syndicate (p. 34).

The Syndicate confirmed V. C. 's orders in permitting Principals of affiliated colleges to admit the candidates who have passed the Inter. Exam. from the Ajmer Board as private candidates (p. 35).

The Syndicate recognised the diplomas of L. M. P. of Bombay & Bihar and L. M. F. of Calcutta for purpose of admission to the condensed M. B., B. S. course (pp. 64-65).

Recommendations of the B. O. S. in Geology (p. 421) reg: admission of those, who had completed the 1st year exam. of the 5 years Engg. course and 1st year of the 3 year degree course without Geology, to the 2nd year B. Sc. with Geology, accepted by Fac. of Sc. (pp. 334-35).

The Fac. of Medicine approved the opinion of the Convener,

C. O. C. in Pharmacy w. r. t. admission of candidates after passing higher secondary exam. to the Pharmacy course (pp. 672-73).

Boards of Studies:—The Fac. of Arts appointed the following persons on the B. O. S. noted against each for the residue of the term (pp. 136-137):—

Shri M. R. V. K. Rao	}	B. O. S. in English
Shri M. L. Sahal		
Shri P. K. Majumdar		B. O. S. in History
Shri Moni Sanyal		B. O. S. in Drawing & Painting

The Fac. of Arts resolved that a B. O. S. in Music in place of C. O. C. in Music be formed (p. 141).

The Fac. of Sc appointed following persons on the B. O. S. noted against each for the residue of the term (p. 332):—

Dr. G. L. Gupta	}	B. O. S. in Physics
Shri S. K. Rathi		
Dr. J. N. Gaur		B. O. S. in Chemistry
Dr. E. Venkaya	}	B. O. S. in Geology.
Shri M. W. Chowdhury		

The Fac. of Com. elected Shri D. P. Gupta on the B. O. S. in Commerce (Allied) for the residue of the term of Shri O. P. Bhargava (p. 531).

Dr. R. N. Varma elected as convener of the B. O. S. in Law (p. 596).

The Fac. of Law elected Dr. G. S. Sharma on B. O. S. in Law for the residue of the term of Shri K. R. R. Sastry (p. 595).

The Fac. of Engg. & Tech. appointed Shri V. C. Natsan on the Board vice Shri K. S. Rane (p. 598).

The Fac. of Medicine appointed Dr. V. N. Sharma on the B.O.S. in Medicine (p. 665).

Colleges:—Recommendation of a Com. appointed for revising Library grants in affiliated colleges referred to the Faculties and A. C. by the Syndicate (p. 2); recommendation of the Com. accepted with modification by Fac. of Arts (pp. 142-3); recommendation accepted by Fac. of Sc. (p. 338); recommendation accepted with modification by Fac. of Commerce (p. 542).

Draft Provident Fund Rules for all non-Government Colleges (pp. 36-44) prepared by a Com. approved by the Syndicate with some modifications (pp. 2-3).

V. C.'s orders in permitting certain colleges to open the 3yr. degree course on certain conditions, confirmed by Syndicate (pp.10-11).

Consideration of proposal of Shri S. D. Derashri in regard to revision of minimum scales of pay for teachers of affiliated colleges postponed by Syodicate (p. 19); minimum scales of pay prescribed and O.66 amended by Syodicate (pp. 61-63).

The question of distribution of subjects among the three heads of departments in Commerce in affiliated colleges referred to the old F. c. of Commerce by the Syndicate (p. 24).

The S. B. considered the request from the Priocipal, Rajasthan College of Agriculture, for exemptiog professional & technical colleges from having a traioed physical instructor (p. 77).

A proposal of Shri M. L. Sahal, Principal, Bangur Coilege, Didwana, w. r. t. oot allowing a professor to head two departments at the post-graduate level approved by Fac. of Arts (p. 143).

Bikaner, Rajasthan College of Veterinary Science and Animal Husbandry:—The Syndicate confirmed the orders of the V. C. in allowing some candidates, who had failed in more than one subject at the I & II B. V. Sc. & A. H. examinations, to keep terms in next higher class (pp. 29-30).

Committees & Conferences:—The question of appointing a Com. for suggesting additions/alterations in Statutes, Ordinances etc. as a result of introduction of 3yr. Degree Course postponed by Syndicate (p. 9).

The Syndicate considered the question of coostituting a B.O.S. in General Educatioo (p. 13).

Suggestion from Dr. S.P. Varma for holdiog the 22nd Conference of the Iodian Political Association at Jaipur oot accepted by the Syodicate (p. 23).

Shri B. D. Bhargava and the Registrar deputed to participate in the 70th anniversary of the Allahabad University by the Syndicate (p. 64).

The B. O. S. in History appointed a Sub-Com. to explore the possibility of iotroductioo of degree in Archaeology (p. 183).

The Fac. of Eogg. & Tech. appointed a Com. to draft details of the scheme w. r. t. allowing teachers to appear at M. E. by thesis (p. 601).

The B. O. S. in Engg. appointed a Com. to draft out syllabus for M. E. (p. 603).

Recommendation of the B. O. S. in Medicine w. r. t. defining the functions and duties of the Post-graduate Medical Education & Research (p. 674) accepted by the Fac. (p. 665).

Committees of Courses:—The Fac. of Arts appointed members to constitute a C. O. C. in Economic and Public Administration (pp. 136-157).

The Fac. of Medicine appointed Dr. B. N. Handa on the C. O. C. in Veterinary Science and Animal Husbandry (p. 665).

Committee for Selection of Examiners:—The following persons were elected to serve on the Com. by their respective B. O. S. noted against each:—

1. Shri S. J. R. Mathur	English	(p. 158)
2. Dr. D. C. Mathur	Philosophy	(p. 164)
3. Dr. R. R. Kasliwal	Pol. Sc.	(p. 168)
4. Dr. G. N. Sharma	History	(p. 183)
5. Dr. R. P. Singh	Economics	(p. 186)
6. Prof. R. G. Ojha	Sanskrit	(p. 214)
7. Shri N. D. Swami	Hindi	(p. 217)
8. Shri R. Zia	Urdu	(p. 233)
9. Shri Brij Raj Chauhan	Sociology	(p. 240)
10. Shri Laxmi Narayan Upadhyaya	Geography	(p. 248)
11. Dr. C. B. Rathi	Mathematics	(p. 257)
12. Shri I. A. Motiwala	Drawing	(p. 267)
13. Dr. V. L. Talekar	Physics	(p. 342)
14. Dr. G. V. Bakore	Chemistry	(p. 353)
15. Dr. K. M. Gupta	Botany	(p. 384)
16. Dr. A. K. Datta Gupta	Zoo'ogy	(p. 387)
17. Shri B. Prasad	Geology	(p. 421)
18. Dr. R. M. Singh	Agriculture	(p. 472)
19. Shri R. K. Agarwal	Com. Practice	(p. 544)
20. Shri G. P. Bhargava	Com. Theory	(p. 555)
21. Shri M. N. Mathur	Com. Allied	(p. 570)
22. Shri K. S. Hajela	Law	(p. 596)
23. Shri V. G. Garde	Engg.	(p. 602)
24. Shri P. S. Naidu	Education	(p. 642)
25. Dr. R. P. Chaturvedi	Medicine	(p. 675)

Convocation:—The Syndicate authorised the V.C. to fix a date for the next Convocation (p. 14).

Courses:—Recommendation of the B. O. S. in Philosophy & Logic w.r.t. inclusion of Philosophy in General Education Course, accepted by Fac. of Arts (p. 139).

Recommendation of the B. O. S. in Sociology w. r. t. introduction of Sociology as an optional paper at the Pre-University Exam. referred back to the Board by the Fac. of Arts (p. 140).

Courses of studies and text-books for various exams. in Arts Faculty as recommended by the B. O. S. and C. O. C. accepted with some modifications by the Fac. (pp. 144-46).

Recommendation of the B. O. S. in Zoology for revising the M. Sc. Courses not accepted by the Fac. of Sc. (pp. 330-31).

Consideration of introducing Biometry postponed by Fac. of Science (p. 331).

Recommendation of the B. O. S. in Mathematics w. r. t. introduction of Statistics as an optional subject at the degree standard, accepted by Fac. of Sc. (p. 365).

The Fac. of Sc. accepted the recommendation of the B. O. S. in Agriculture w. r. t. courses of study and Text-Books for the old scheme (p. 338) and referred back the recommendation w. r. t. the introduction of 3 year degree course scheme in Agriculture (pp. 338-39).

Courses of studies and text-books for various exams. in Science Faculty as recommended by the B. O. S. and C. O. C. accepted by the Fac. of Sc (pp. 339-41).

The Fac. of Com. resolved that candidates be permitted to take thesis at the M. Com. Exam. (p. 532).

Courses of study and text-books for various exams in Commerce Fac. as recommended by the B. O. S. accepted with modifications by the Faculty (pp. 536-42).

Recommendations of the B. O. S. in Law w. r. t. courses of study and text-books (p. 597) accepted by the Fac. of Law (p. 595).

Recommendations of the B. O. S. in Engg. & Tech. w. r. t. courses of study and text-books accepted with modifications by the Faculty (pp. 598-99).

Recommendation of a Com. appointed to draft the syllabus for M. E. Exam. (pp. 602-629); accepted by the B. O. S. in Engg. (p. 606) by the Fac. (p. 609).

Recommendation of the B. O. S. in Education w. r. t. introduction of courses on Social Hygiene and Sex Education, and Radio Education accepted by the Fac. (pp. 634-35).

The Fac. of Education considered a proposal of Dr. J. N. Kaul for rationalising the syllabus of J. Ed courses (pp. 640-41) and appointed a Com. to examine the proposal (p. 635).

Courses of study and text-books as recommended by the B.O.S. in Education accepted with modifications by the Faculty (pp. 635-38).

Courses of study in Medicine as recommended by the Board approved by the Fac. of Medicine (p. 666).

Present courses of study in Veterinary Science repeated and C. O. C. asked to give definite recommendations on Model Syllabus by the Fac. of Medicine (p. 667).

Recommendations of the C. O. C. in Pharmacy reg : courses of study accepted by the Fac. of Medicine (p. 667).

Degrees & Diplomas:—The Syndicate approved the draft of the diploma (p. 45) for the degree of Bachelor of Veterinary Science and Animal Husbandry (p. 17).

On the unanimous recommendation of the referees on the theses of M/s Keshav Chandra Sordhi, Brahmanand Sharma, Ishwar Chandra Sharma, Ishwar Prakash, Ramanand Tiwari, N. C. Nair, S. N. Mukherjee and Mrs. Krishna Kumari the Syndicate awarded the Ph. D. degree on them (pp. 17-18).

The Syndicate resolved to award the D. Sc. degree on Dr. Ram Sahai Saxana (p. 18).

The thesis submitted by Shri Moti Lal Karel for the award of Ph. D. rejected by Syndicate (p. 18).

The Syndicate resolved that an enquiry be made from Sanskrit University Banaras whether a thesis for Vachaspati degree be written in Hindi (p. 19).

The Syndicate resolved to award Ph. D. degree on M/s Jeth Mal Joshi, S. R. Venkat Subharao and Shyam Shanker Dixit (p. 68).

V. C.'s orders in approving the draft of diploma for the degree of Doctor of Science confirmed by Syndicate (p. 73).

Establishment —The Syndicate allowed the clerks of the Central Office to go as University nominees for library training (p. 9).

The Syndicate appointed a Com. to examine a proposal for creation of a separate section (Statistics) in the office (p. 22); recommendations of the Com. (pp. 117-121) approved by Synoicate (p. 63).

The resignation of Shri R. K. Agarwal, from the post of Dy. Registrar accepted by Syndicate (pp. 25-26), permanent arrangements made in his place by Syndicate (p. 72).

V. C.'s orders in creating the post of a whole time peon in

attendance on his P. A., confirmed by Syndicate (p. 27).

The Syndicate confirmed V. C.'s orders in permitting temporary withdrawals to the persons (given on pp. 53-55) from their P. F. Accounts (p. 35).

Examinations:—The Syndicate resolved that Proficiency Test in Hindi be held twice a year (pp. 3-4).

The Syndicate considered an office proposal to check the malpractice of candidates writing some unauthorised things in answer books (pp. 4-5).

The question whether private candidates can appear at 3 yr. Degree examinations referred to the 3 yr. Degree Course Com. by Syndicate (p. 5).

Recommendation of the B. O. S. in Hindi w. r. t. holding the Hindi Examinations in October accepted by Syndicate (p. 6).

The question w. r. t. award of division at M. Sc. Exam. referred to A. C. by Syndicate (p. 12).

The request of the Principal, M. B. M. Engg. College, Jodhpur, for holding the B. E. Civil Exam. in January referred to A. C. by Syndicate (p. 16).

The Syndicate considered the dates for the commencement of the various University examinations of 1959 (pp. 16-17 & 69).

Action taken by the Results Com. in connection with the unfair means cases confirmed by Syndicate (pp. 24-25).

On realisation of oversight on his part by the examiner, one student was declared as passed in Surgery by the Syndicate (p. 27).

V. C.'s orders in relaxing the condition of obtaining 55% marks in the aggregate for the purpose of appearing at the B. E. Final Exam., confirmed by Syndicate (p. 28).

V. C.'s orders in allowing one Shri Laxmi Chand Sharma, a failure of LL. B. (Previous) Exam. of 1950, to appear at 1958 Exam. as an Ex-student after completing attendance for one term in Equity paper, confirmed by Syndicate (p. 30).

The Syndicate confirmed the orders of the V. C. in prescribing minimum pass marks in Theory and Practical test for Music at B.A. Three-year Degree Course (pp. 31-32).

V. C.'s orders in condoning the shortage in attendance of some candidates confirmed by Syndicate (p. 5).

The Syndicate allowed Shri Munshi Lal to appear at the M. A. (Previous) Exam. in Economics pending consideration of the question of defining the scope of the term Bachelor's degree (pp. 67-68); Fac. of Arts defined the scope of the term (p. 143).

The Fac. of Arts resolved that failed candidates be permitted to submit the same thesis again after bringing it up-to-date (p. 142).

Proposal of Shri G. R. Nigam reg : holding of practical examination not accepted by the Fac. of Science (p. 330).

Recommendation of the B. O. S. in Zoology reg : holding University Exam. at the end of 2nd year degree course accepted by Fac. of Sc. (p. 333).

The Fac. of Sc. resolved that marks for practical note books should be awarded by teachers of the subject concerned (p. 333).

The Fac. of Sc. discussed thoroughly the question of continuing thesis at the M. Sc. stage (pp. 333-34). The Fac. of Education did not agree to the recommendation of Science Fac. (p. 639).

The Fac. of Sc. asked the B. O. S. to suggest the allocation of marks for practicals for ex-students (pp. 337-38).

The Fac. of Sc. considered the question of awarding division at the B. Sc. Ag. Pt. II Exam. after passing the B. Sc. Ag. Part supplementary exam. (p. 338); The Fac. of Commerce resolved that no division be awarded (pp. 531-32) the Faculty of Law resolved that no division be awarded (p. 595).

A Sub-Com. in Commerce recommended details of the practical training for the M. Com. students (pp. 527-29).

The Fac. of Engg. & Tech. resolved that not more than one third of questions be set in question papers for choice of students (pp. 599-600).

The B. O. S. in Engg. recommended (i) the distribution of practical training of 140 days and (ii) that the final B. E. Exam. be held in the middle of February (p. 603); recommendation accepted by the Fac. (p. 598).

Proposal of Shri K. K. Chaturvedi w. r. t. appearing of B. Ed. students in special paper in a subsequent year (pp. 662-63) referred to a Com. by the Fac. of Education (p. 638).

The Fac. of Medicine resolved that a supplementary examina-

tion be held in July for failures of 1st M. B., B. S. Exam. (p. 667).

The Fac. of Medicine appointed a Com. to consider the question of reviewing and harmonising the rules governing admission of students to the Veterinary Sc. Exams. (pp. 670-71).

Examination Centres:—The Syndicate confirmed the V. C.'s orders in sanctioning payment of excess expenditure incurred at the exam. centres on account of contingent charges (pp. 32-34).

Reports of the inspectors who paid surprise visits to examination centres for 1958 examinations recorded by Syndicate (p. 64).

Examiners:—The Syndicate resolved that half setting fee and full marking fee be paid in a case where a question paper for M. A. is divided into two sections (pp. 63-64).

Recommendations of the Com. for Selection of Examiners approved with some modifications and V. C.'s orders in issuing invitations to paper setters confirmed by Syndicate (pp. 65-66).

The B. O. S. in Engg. recommended the scales of remuneration to be paid to examiners in Public Health Engg. and Project paper (pp. 69-5).

Exemption from Minimum Qualifications:—Shri A. L. Mathur, Lecturer, G. B. Podar College, Nawalgargh, not granted exemption from minimum qualifications laid down for the headship of a degree department by Syndicate (p. 21).

Faculties:—The Fac. of Arts co-opted Shri M. L. Solanki and Mrs. S. L. Agarwal from among teachers in the Faculty vice M/s G. S. Jainan and P. C. Sahal (p. 135).

Grace Marks Rules:—Office suggestion for grace marks rules for the examinations in the 3yr. Degree Course and Pre-University examinations accepted by Syndicate (p. 69).

Grants:—Request from the President, Current Science Association, Raman Research Institute, Bangalore, for giving annual subvention to the journal 'Current Science' not accepted by Syndicate (p. 6).

Inter-University Board:—V. C. was authorised to nominate two persons to attend the Eighth Quinquennial Conference of the Universities by Syndicate (pp. 9-10).

Minimum Qualifications:—The question of recognition of Diploma Course in Physical Training conducted by the Rajasthan Government considered by the Syndicate (p. 2).

Recommendations of the B. O. S. in Drawing & Painting prescribing minimum qualifications for teachers, not accepted by the Fac. of Arts (pp. 141-42).

Recommendations of the B. O. S. in Agriculture w. r. t. minimum qualifications of teachers for Agriculture (p. 473) accepted by Fac. of Sc (pp. 335-36).

Miscellaneous.—The Syndicate allowed M/s Pioneers to raise hire charges of gowns and hoods (p. 1) and renewed contract for a further period of 3 years (p. 2).

Offer from the Manager, United Commercial Bank Ltd., Jaipur for opening a branch of the Bank in the University Campus not accepted by the Syndicate (p. 3).

Recommendation of the University Education Re-organisation Committee w. r. t. setting up a residential University at Jodhpur accepted by Syndicate (p. 6).

The Syndicate referred to the P. B. a letter from the Under Secretary to the Govt. of India, Ministry of Education, for undertaking the translation of standard works of University level (p. 7).

Consideration of drafts of certain documents in connection with the annual supply of stationery & printing postponed by the Syndicate (p. 23); drafts of the documents (pp. 122-23) approved by Syndicate (p. 63).

Request from the Secretary, Teachers' Association for allowing them to appear at the M. Sc. Examination as teacher candidates not acceded to by Syndicate (pp. 23-24).

Recommendation of the Science Sub-Committee of the University Education Reorganisation Com. w. r. t. admission to the 5 year B.E. Degree course (pp. 129-30); accepted by Syndicate (p. 65).

The matter w. r. t. prescribing compulsory service for all young men and women referred to the University Education Reorganisation Com. by Syndicate (pp. 71-72).

The S. B. postponed the consideration of proposal for holding the debates in English & Hindi (p. 99).

The proposal for introducing a 3 months' course of Research Methods and Techniques in the University Deptt. of Economics accepted by the Fac. of Arts (pp. 137-38).

The Fac. of Arts agreed to in principle to the proposal of

Prof. S. D. Derashri w. r. t. introduction of marks for class work (p. 138).

Recommendation of the B. O. S. in English on the resolution of All India Educational Conference reg : improvement in teaching of English accepted by the Fac. of Arts (pp. 138-39).

The Fac. of Arts accepted the recommendations of the B. O. S. in Sociology and Economics w. r. t. introduction of Forest Economy and Tribal Welfare and resolved to inform the Secretary, University Grants Commission accordingly (pp. 140-41).

Recommendation made by the joint meeting of the Conveners of B. O. S. in Economics, Geography and Mathematics to find out the common basis for the Faculties of Arts & Science (p. 142).

Request from the Director of Economics and Statistics reg : inclusion of certain publications among recommended books considered by Boards of Studies in Economics (p. 187-197), Sociology (p. 241), Geography (p. 249), Commerce Practice (p. 545), Commerce Theory (p. 556).

Proposal of Central Advisory Board of Education reg : allowing teachers to appear at the M. Sc. Exam. considered by Fac. of Sc. (pp. 336-37).

The Fac. of Engg. and Tech. resolved that moderation of question papers at the Engineering examinations is very necessary (p. 601).

The question of payment of fees to internal practical examiners and Chairman and remuneration to demonstrators and class IV servants referred to Principals of Engg. Colleges by the B. O. S. for re-examination (p. 604), recommendations of the Principals (pp. 630-33), accepted by the B. O. S. p. 607 and Fac. (p. 600).

Recommendations of the B. O. S. in Medicine reg : implementation of the recommendations made by the conference on Under Graduate Medical Education (p. 675), accepted by the Fac. (p. 666).

The Fac. of Medicine referred the rules relating to the Exam. for the degree of Ph. D. in Medicine to the Com. of Postgraduate Medical Education and Research (pp. 669-70).

Ordinances:—Ordinance 199 B. amended by Syndicate (p. 4).

Office suggestion for amending O. 158 A not accepted by Syndicate (p. 4).

The Syndicate accepted the addition to O. 305 (p. 5).

The Syndicate did not favour the inclusion of instructions for maintenance of students' attendance register in O. 144 A (pp. 7-9)

Amendment to O. 146 in connection with the last dates of receipt of application forms for admission to University examinations made by Syndicate (pp. 13-14).

A Note added to O. 86 by Syndicate (p. 14).

A new paragraph added to O. 207, 228 and 246 by the Syndicate (p. 22).

O. 66 amended by the Syndicate (p. 62).

Amendment to O. 16 not accepted by the Syndicate (p. 63).

The Syndicate amended O. 254 with regard to admission of students to the Law exams. (pp. 68-69).

The Syndicate appointed a Com. to consider the amended ordinance 376 F in connection with the retention of University employees after the age of superannuation (pp. 69-70).

Ordinances 229 to 232 (pp. 475-79) recommended by B. O. S. in Agriculture (p. 472) not accepted by the Fac. of Sc. (p. 339).

Amended ordinances 54, 55 and 65A suggested by the Fac. of Commerce (pp. 532-536).

Amended ordinances 319 A to 319 Q (pp. 610-13) as recommended by the B. O. S. in Engg. (p. 606) accepted by the Fac (p. 600).

Amendment to O. 209 M (e) (i) proposed by the Fac. of Medicine (p. 668).

Addition in O. 268 (d) w. r. t. post-training for condensed course students suggested by the Fac. of Medicine (pp. 668-69).

Faculty of Medicine proposed a new O. 299 (V) (pp. 671-72).

Amendments to O. 293-294 (p. 742) as recommended by C.O.C. in Pharmacy (p. 740) accepted by the Fac. of Medicine (p. 667).

Recognition.—V. C. 's orders in recognising the Inter. Exam. and Higher Secondary Exam. of the Board of Secondary Education Rajasthan, Jaipur for one year only confirmed by Syndicate (p. 30).

Recommendation of the B. O. S. in Chemistry (p. 354) for not

recognising the Associateship in Fruit Technology of Mysore equivalent to M. Sc. accepted by Fac. of Sc. (p. 333).

The question of recognition of B. E. degree of Delhi University and B. E. degree in Civil Engg. of Sardar Vallabh Bhai Vidyapith considered by the B. O. S. in Engg. (p. 607).

Mahatma Gandhi Hospital, Jodhpur recognised for purpose of training of fresh medical graduates as interneers by the Fac. of Medicine (p. 666), Victoria Hospital, Ajmer also recognised by the Fac. (p. 670).

Regulations:—Regulations 41-A1 to 41-B reg. M. E. Exam. (pp. 614-616) as recommended by the B. O. S. in Engg. (p. 606), accepted by the Fac. (p. 600).

Regulations 31 and 32 reg. R. Pharm. Exams. (pp. 743-44) as recommended by the C. O. C. in Pharmacy (p. 740) accepted by the Fac. (p. 667).

Scholarships & Medals:—V. C. authorised to take necessary action in the matter w. r. t. institution of Gold Medal by Rai Bahadur Rameshwar Lal Saharia by the Syndicate (p. 20).

The Syndicate resolved that Shri Radha Kishan Khetan Gold Medal be awarded to each of the two students, who secured equal marks at the B A. Exam., and one medal be prepared by the University (p. 25).

The S. B. resolved that A. P. Cox Jodhpur Gold Medal be awarded to Shri Harwant Singh of Bikaner being the best athlete of 1957-58 (p. 78).

Sports Board:—The Syndicate postponed consideration of recommendations of the S. B. and desired that Tournament rules framed by the Board be circulated among the members of Syndicate (p. 13).

Recommendations of the S. B. (pp. 76-116) approved by the Syndicate with some modifications (pp. 57-61).

The S. B. considered a proposal from the General Manager, the Atlas Cycle Industries, Sonapat to keep a moving Trophy for Bicycle race (p. 19).

T. A.:—V. C.'s orders in sanctioning of actual third class railway fare to Shri P. G. Anantwar a candidate for the steno's post in the University Deptt. of Economics, confirmed by Syndicate (p. 28).

The Syndicate confirmed the orders of the V. C. in allowing T. A. to (i) Shri Bhim Sen, Principal Govt. College, Ajmer for two trips in connection with two meetings of the University with an interval of two days only (ii) Principal D. Vable in respect of surprise inspection of the Engineering College, Jodhpur, which he inspected before the commencement of the examination under the wrong impression (iii) Dr. K. L. Wig who travelled in Air Conditioned coach from Amritsar to Delhi for conducting the practical examination in M. D. Part I & II (pp. 30-31).

V. C.'s orders in sanctioning T. A. to Dr. R. B. Arora for two trips from Delhi to Jaipur with an interval of less than 4 days, confirmed by Syndicate (p. 32).

The Syndicate confirmed V. C.'s orders in sanctioning T. A. to Dr. R. D. Adatia from Bombay to Piani through a longer route (p. 34)

V. C.'s orders in sanctioning T. A. to M/s S. S. Saxena and Bhim Sen through a longer route with no saving of time in connection with the inspection of the Govt. College, Banswara, confirmed by Syndicate (p. 74).

University Hostel:—V. C.'s orders in approving ad hoc arrangements for providing lodging facilities to some students of University Depts. at Jaipur, confirmed by Syndicate (pp. 74-75).

University Library:—V. C.'s orders in sanctioning 19 days leave on full pay to Shri S. N. Mathur, Asstt. Librarian, confirmed by Syndicate (p. 73)

University Publications:—The request from various firms for increase in prices of Text Book of University considered by Syndicate (pp. 11-12 & 70-71).

The Syndicate confirmed the orders of the V. C. in sanctioning payment of Rs. 500/- to Shri K. L. Bordia for revising the book Samajik Gyan (p. 29).

University Teaching Departments:—The Registrar reported to Syndicate that H. H. Maharao Bhim Singhji of Kota had agreed to contribute for a further period of 5 years to History Deptt. (p. 9)

Recommendation of a Com. (pp. 46-47) appointed to consider the application of Shri Narendra Singh for study leave approved by Syndicate (p. 21).

Recommendations (pp. 48-49) of the Com. for Selection for

the appointment of a Principal for the University Law College accepted by Syndicate (pp. 21-22).

V. C. 's orders in extending facility of freeships and granting half-freeships to some students in the History Department, confirmed by Syndicate (pp. 27-28).

V. C. 's orders in recommending names of expert to be appointed by the Chancellor on the Committees for selection of Reader and Workshop Superintendent in the Geology Dept. confirmed by Syndicate (pp. 66-67).

V. C. 's orders in appointing Dr. R. N. Varma as a temporary Reader in University Law College, confirmed by Syndicate (p. 73).

The Syndicate confirmed the orders of the V. C. in (i) condoning shortage of 1 days service and (ii) granting commuted leave to Shri K. Vishwanathiah (p. 73).

V. C. 's orders in sanctioning commuted leave to Dr. M. L. Sharma, confirmed by Syndicate (p. 74).
